

# **For Reference**

---

**NOT TO BE TAKEN FROM THIS ROOM**




Ex libris  
UNIVERSITATIS  
ALBERTAEASIS











Digitized by the Internet Archive  
in 2023 with funding from  
University of Alberta Library

<https://archive.org/details/MacDonald1976>





THE UNIVERSITY OF ALBERTA

RELEASE FORM

NAME OF AUTHOR Irene Frances MacDonald  
TITLE OF THESIS Teacher-Pupil Interaction and the  
Development of Moral Reasoning in  
Sixth-Grade Children  
DEGREE FOR WHICH THESIS WAS PRESENTED Ph.D.  
YEAR THIS DEGREE GRANTED 1976

Permission is hereby granted to THE UNIVERSITY OF ALBERTA LIBRARY to reproduce single copies of this thesis and to lend or sell such copies for private, scholarly or scientific research purposes only.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.





THE UNIVERSITY OF ALBERTA

TEACHER-PUPIL INTERACTION AND THE DEVELOPMENT OF MORAL  
REASONING IN SIXTH-GRADE CHILDREN

by



Irene Frances MacDonald

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH  
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE  
OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA

FALL, 1976





THE UNIVERSITY OF ALBERTA  
FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and  
recommend to the Faculty of Graduate Studies and Research,  
for acceptance, a thesis entitled

TEACHER-PUPIL INTERACTION AND THE DEVELOPMENT  
OF MORAL REASONING IN SIXTH-GRADE CHILDREN

submitted by IRENE FRANCES MACDONALD in partial fulfilment  
of the requirements for the degree of Doctor of Philosophy.





## ABSTRACT

The study investigated the relationship between teacher-pupil interaction, analyzed from the standpoint of the intellectual operations elicited by the teacher's day-to-day style of questioning, and the development of moral reasoning in sixth-grade pupils. The relationships of pupil class participation, IQ, and sex differences to initial level and developmental change in moral reasoning were also investigated. In a post hoc analysis, pupils' usage of the issues associated with the dilemmas of the Kohlberg Moral Judgment Scale were examined in relation to level of moral reasoning, sex and classroom differences, and to raters' expectations of the issue usage appropriate for each item of the Scale. A study sample of three teachers and their pupils was selected on the basis of the teachers' scores on the Teacher Opening-Closing Behaviours Scale. Pre- and posttest measures of moral reasoning were obtained for all subjects at the beginning and end of the school year using the Kohlberg Moral Judgment Scale, as well as data on sex, IQ, and frequency and cognitive level of class participation. Further data concerning classroom verbal interaction were gathered through recorded class discussions of moral dilemmas.

Analyses of variance and covariance established a significant difference between the classes on the posttest dilemmas which were repeated from the pretest. A



curvilinear relationship was shown between teachers' use of opening and closing behaviours and developmental change in pupils' moral reasoning. Content analysis of the recorded class discussions indicated a characteristic sequence and emphasis in each teacher's use of opening and closing verbal behaviours which may also have contributed to the teacher effect found in the study. In addition, pupils who participated more frequently in class discussions had higher initial levels of moral reasoning, suggesting a possible relationship between active class participation and long-term development in moral reasoning. Although individual measures of frequency and cognitive level of class participation were not systematically related to change in moral reasoning over the school year, the class group which showed the most change also showed more generalized class participation. While there were no sex differences in initial level of moral reasoning nor on the repeated dilemmas of the posttest, girls scored higher than boys on the new dilemmas of the posttest. A confounding of sex and IQ was suggested as a possible explanation of this finding. As expected, both initial level and developmental change in moral reasoning were positively related to IQ. Initial level of moral reasoning was consistently found to be the best predictor of developmental change.

Analysis of subjects' issue usage showed a relationship between issue usage and stage, with moral problems





being defined in terms of particular issues at specific stages, and certain issues appearing to be beyond the competence of the age range of the sample. A positive relationship was shown between subjects' moral reasoning scores and approximation to scorers' expectations regarding issue usage. Changes in level of moral reasoning appeared to be preceded by changes in issue usage.

Teaching style was upheld as an important naturalistic factor in the development of moral reasoning, while initial level of moral reasoning was seen as important in planning interventions for developmental change. Because of the gradualness of the change process, it was concluded that the emphasis in elementary school moral education programs should be on the lateral extension of existing moral structures, rather than on stage change exclusively. A possible model for such within-stage development was derived from an analysis of longitudinal trends in the data. Finally, the study suggested ways in which the use of a combination of opening and closing behaviours in teaching style promotes the acquisition of specific logical and affective skills required for moral reasoning.





## ACKNOWLEDGMENTS

To Dr. W. Hague, my supervisor, and to the members of my thesis committee, Dr. H. Janzen and Dr. D. Sawatzky, for their expertise in directing the thesis, and for their friendship and assistance throughout these several good years at the University of Alberta.

To Dr. L. Mos and Dr. E. Sullivan, whose expert reading of the thesis and participation in the oral examination enriched the experience.

To Dr. Golda Rothman of Columbia University, New York, whose insights into moral development from her own mentor, Dr. E. Turiel, were shared generously with her students.

To Dr. A. Bellack of Columbia University, and Dr. Esther Zaret of Bank Street College, New York, for consultation on the interaction analysis schema used in the study.

To the personell of the Edmonton Catholic School System, particularly Miss Terese Cossitt of the Central Office, the principals and teachers who cooperated in the research, and the staff of the Instructional Materials Centre, all of whom made essential and gracious contributions to the research.

To the pupils who participated in the study. They made the research project come alive in many important ways.

To the Department of Advanced Education of the Province of Alberta, and the Canada Council for Research in the Humanities, for scholarships which enabled me to undertake this research.

To my husband, Dr. R. J. Hine, of Fordham University, New York, for sharing both the rigours and the challenges of the dissertation. He understood.



## TABLE OF CONTENTS

| CHAPTER  | PAGE |
|--|------|
| I. INTRODUCTION.....   | 1    |
| Background to the study.....   | 1    |
| Rationale for the study.....   | 2    |
| Statement of the problem.....  | 7    |
| Definition of terms.....   | 8    |
| Significance of the study.....   | 9    |
| II. REVIEW OF THE RELATED LITERATURE.....  | 13   |
| Cognitive-developmental theory of moral development.....   | 15   |
| The logical-operational foundations of pre-conventional and early conventional moral reasoning.....                      | 21   |
| Stage transition within cognitive-developmental theory of moral development.....   | 25   |
| Research methodology in the cognitive-developmental approach to moral development.                                       | 29   |
| Research into conditions for moral development among school-age children from a cognitive-developmental perspective..... | 37   |
| Intervention by +1 reasoning.....  | 38   |
| Intervention by teaching method.....   | 40   |
| Intervention by presenting opinions.....   | 41   |
| Intervention by behavioural change.....  | 43   |
| Correlates of stage change.....  | 45   |
| Naturalistic studies.....  | 53   |
| Systems for observation of teacher-pupil interaction related to pupil cognitive conflict.....                            | 54   |
| Research hypotheses.....   | 58   |





| CHAPTER   | PAGE |
|---|------|
| III. EXPERIMENTAL DESIGN AND STATISTICAL PROCEDURES | 61   |
| General description.....                            | 61   |
| Subjects.....                                       | 62   |
| Materials.....                                      | 68   |
| Pilot tests of the instrument.....                  | 71   |
| Research methodology.....                           | 73   |
| Statistical procedures.....                         | 76   |
| IV. ANALYSIS OF THE DATA.....                       | 81   |
| Hypothesis 1.....                                   | 81   |
| Hypothesis 2.....                                   | 94   |
| Hypothesis 3.....                                   | 95   |
| Analysis of issue usage.....                        | 114  |
| V. DISCUSSION.....                                  | 129  |
| Effects of teaching style.....                      | 129  |
| Effect of pupil participation.....                  | 134  |
| Effect of sex and IQ differences.....               | 138  |
| Findings regarding issue usage.....                 | 139  |
| Theoretical implications.....                       | 141  |
| Educational implications.....                       | 147  |
| Implications for further research.....              | 153  |
| Conclusion.....                                     | 155  |
| APPENDICES.....                                     | 157  |
| Appendix A: Intellectual Operations.....            | 157  |
| Appendix B: Class Participation Rating.....         | 159  |





| APPENDICES  | PAGE |
|---|------|
| Appendix C: Analyses of Variance: Raw<br>Change Scores on Moral Judgment Scale for<br>Three Class Groups.....                                       | 160  |
| Appendix D: Classification of Excerpts<br>from Discussion I for Teachers A, B, and<br>C, using the Teacher Opening-Closing<br>Behaviours Scale..... | 162  |
| Appendix E: Unadjusted Mean Scores.....   | 165  |
| REFERENCES.....   | 166  |



## LIST OF TABLES

| TABLE |  | PAGE |
|-------|--|------|
| 1.    | Scores of Nine Teachers on Teacher Opening-Closing Behaviours Scale.....   | 66   |
| 2.    | Scores of Three Teachers on Teacher Opening-Closing Behaviours Scale.....  | 82   |
| 3.    | Analysis of Variance: Pretest Moral Judgment Scores of Three Class Groups.....   | 85   |
| 4.    | Probability Matrix for Scheffé Multiple Comparison of Means: Pretest Moral Judgment Scores of Three Class Groups.....                                      | 87   |
| 5.    | Analysis of Covariance: Adjusted Direct Posttest Moral Judgment Scores of Three Class Groups.....  | 89   |
| 6.    | Probability Matrix for Scheffé Multiple Comparison of Means: Adjusted Direct Posttest Moral Judgment Scores of Three Class Groups.....                     | 89   |
| 7.    | Analysis of Covariance: Adjusted Indirect Posttest Moral Judgment Scores of Three Class Groups.....  | 92   |
| 8.    | Probability Matrix for Scheffé Multiple Comparison of Means: Adjusted Indirect Posttest Moral Judgment Scores of Three Class Groups.....                   | 92   |
| 9.    | Analysis of Covariance: Adjusted Total Posttest Moral Judgment Scores of Three Class Groups.....   | 93   |
| 10.   | Probability Matrix for Scheffé Multiple Comparison of Means: Adjusted Total Posttest Moral Judgment Scores of Three Class Groups.....                      | 93   |
| 11.   | Analysis of Variance: Pretest Moral Judgment Scores for High, Medium, and Low Frequency of Class Participation.....  | 96   |
| 12.   | Probability Matrix for Scheffé Multiple Comparison of Means: Pretest Moral Judgment Scores for High, Medium, and Low Frequency of Class Participation..... | 96   |





|     |  |     |
|-----|--|-----|
| 13. | Analysis of Covariance: Adjusted Direct Posttest Moral Judgment Scores for High, Medium, and Low Frequency of Class Participation.....         | 97  |
| 14. | Analysis of Covariance: Adjusted Indirect Posttest Moral Judgment Scores for High, Medium, and Low Frequency of Class Participation.....       | 97  |
| 15. | Analysis of Covariance: Adjusted Total Posttest Moral Judgment Scores for High, Medium, and Low Frequency of Class Participation.....          | 98  |
| 16. | Analysis of Covariance: Adjusted Direct Posttest Moral Judgment Scores for High, Medium, and Low Cognitive Level of Class Participation.....   | 98  |
| 17. | Analysis of Covariance: Adjusted Indirect Posttest Moral Judgment Scores for High, Medium, and Low Cognitive Level of Class Participation..... | 99  |
| 18. | Analysis of Covariance: Adjusted Total Posttest Moral Judgment Scores for High, Medium, and Low Cognitive Level of Class Participation.....    | 99  |
| 19. | Analysis of Variance: Pretest Moral Judgment Scores for Boys and Girls.....  | 101 |
| 20. | Analysis of Covariance: Adjusted Direct Posttest Moral Judgment Scores for Boys and Girls.....   | 101 |
| 21. | Analysis of Covariance: Adjusted Indirect Posttest Moral Judgment Scores for Boys and Girls.....   | 102 |
| 22. | Analysis of Covariance: Adjusted Total Posttest Moral Judgment Scores for Boys and Girls.....  | 102 |
| 23. | Analysis of Covariance: Direct Posttest Moral Judgment Scores for Three Class Groups Adjusted for Pretest and Sex.....                         | 103 |



| TABLE   | PAGE |
|---|------|
| 24. Probability Matrix for Scheffé Multiple Comparison of Means: Direct Posttest Moral Judgment Scores for Three Class Groups Adjusted for Pretest and Sex.....   | 103  |
| 25. Analysis of Covariance: Indirect Posttest Moral Judgment Scores for Three Class Groups Adjusted for Pretest and Sex.....                                      | 104  |
| 26. Probability Matrix for Scheffé Multiple Comparison of Means: Indirect Posttest Moral Judgment Scores for Three Class Groups Adjusted for Pretest and Sex..... | 104  |
| 27. Analysis of Covariance: Total Posttest Moral Judgment Scores for Three Class Groups Adjusted for Pretest and Sex.....   | 105  |
| 28. Probability Matrix for Scheffé Multiple Comparison of Means: Total Posttest Moral Judgment Scores for Three Class Groups Adjusted for Pretest and Sex.....    | 105  |
| 29. Analysis of Variance: Pretest Moral Judgment Scores for High and Low IQ Groups.....   | 107  |
| 30. Analysis of Covariance: Adjusted Direct Posttest Moral Judgment Scores for High and Low IQ Groups.....  | 107  |
| 31. Analysis of Covariance: Adjusted Indirect Posttest Moral Judgment Scores for High and Low IQ Groups.....  | 108  |
| 32. Analysis of Covariance: Adjusted Total Posttest Moral Judgment Scores for High and Low IQ Groups.....   | 108  |
| 33. Analysis of Covariance: Pretest Moral Judgment Scores for Three Class Groups Adjusted for IQ.....   | 109  |
| 34. Analysis of Covariance: Direct Posttest Moral Judgment Scores for Three Class Groups Adjusted for Pretest and IQ.....   | 110  |





| TABLE  | PAGE |
|--|------|
| 35. Probability Matrix for Scheffé Multiple Comparison of Means: Direct Posttest Moral Judgment Scores for Three Class Groups Adjusted for Pretest and IQ..... | 110  |
| 36. Analysis of Covariance: Indirect Posttest Moral Judgment Scores for Three Class Groups Adjusted for Pretest and IQ....                                     | 111  |
| 37. Analysis of Covariance: Total Posttest Moral Judgment Scores for Three Class Groups Adjusted for Pretest and IQ.....                                       | 111  |
| 38. Summary of Conclusions.....  | 113  |
| 39. Mean Percent Issue Usage for Five Ranges of Pretest Moral Judgment Scores.....   | 115  |
| 40. Mean Percent Issue Usage for Five Ranges of Direct Posttest Moral Judgment Scores....  | 117  |
| 41. Mean Percent Issue Usage for Five Ranges of Total Posttest Moral Judgment Scores.....  | 120  |
| 42. Mean Percent Issue Usage on Pretest Moral Judgment Scale for Girls and Boys.....   | 126  |
| 43. Mean Percent Issue Usage on Total Posttest Moral Judgment Scale for Girls and Boys.....  | 126  |
| 44. Mean Percent Issue Usage on Pretest Moral Judgment Scale for Three Class Groups.....   | 127  |
| 45. Mean Percent Issue Usage on Direct Posttest Moral Judgment Scale for Three Class Groups.....   | 127  |
| 46. Mean Percent Issue Usage on Total Posttest Moral Judgment Scale for Three Class Groups.....  | 128  |



## LIST OF FIGURES

| FIGURE   | PAGE |
|--|------|
| 1. Teacher Opening-Closing Behaviours<br>Scale: classification of teacher cues.....                      | 64   |
| 2. Distribution of pretest Moral Judgment<br>scores.....   | 84   |
| 3. Distribution of pre- and posttest<br>Moral Judgment scores.....                                       | 88   |
| 4. Teacher Verbal Behaviour and adjusted<br>class means on direct posttest Moral<br>Judgment scores..... | 91   |
| 5. Mean percent Issue Usage across five<br>ranges of pretest Moral Judgment scores....                   | 116  |
| 6. Mean percent Issue Usage across five<br>ranges of direct posttest Moral Judgment<br>scores.....       | 118  |
| 7. Mean percent Issue Usage across five<br>ranges of total posttest Moral Judgment<br>scores.....        | 121  |
| 8. Expected and actual Issue Usage on<br>pretest.....  | 123  |
| 9. Expected and actual Issue Usage on total<br>posttest.....   | 125  |
| 10. Within-stage development: suggested<br>trends from protocols.....                                    | 145  |





# TEACHER-PUPIL INTERACTION AND THE DEVELOPMENT OF MORAL REASONING IN SIXTH-GRADE CHILDREN

## CHAPTER I

### Introduction

#### Background to the study

In the past decade a number of studies, following Piaget (1965) and Kohlberg (1963, 1969a), have investigated the factors mediating the development of moral reasoning in children of elementary school age (Blatt & Kohlberg, 1973; Keasey, 1971, 1973, 1974; Krebs & Kohlberg, 1973; Moir, 1974; Rest, Turiel, & Kohlberg, 1969; Selman, 1971; Selman & Byrne, 1974; Sullivan, 1975; Sullivan, McCullough, & Stager, 1970; Tomlinson-Keasey & Keasey, 1974; Tracy & Cross, 1973; Turiel, 1966, 1969, 1973b; Turiel & Rothman, 1972). A number of these studies have attempted experimentally to stimulate development through systematic interventions. In contrast, the present study was a naturalistic one, investigating factors already present in the classroom setting and the effect of these upon the child's level of moral reasoning. The classroom variable selected for particular investigation was the teacher's day-to-day verbal behaviour, analyzed from the standpoint of the intellectual operations elicited by the teacher's style of questioning in regular classroom interaction (Aschner, 1963; Aschner, Gallagher, Jenné, Perry, Farr, & Afsar, 1963, 1965; Gallagher, 1964; Gallagher & Aschner, 1968; Gallagher, Aschner,



& Jenné, 1967; Guilford, 1956, 1959, 1966; Guilford & Hoepfner, 1971; Macdonald & Zaret, 1968, 1970). The relationship between this variable and the development of moral reasoning in the pupils posed the main problem of the study. The relationships of pupil class participation, IQ, and sex differences to initial level and developmental change in moral reasoning were also investigated.

While moral development as a whole involves a number of dimensions, including moral knowledge, moral sensitivity, moral reasoning, and moral action (Baier, 1971; Gibbs, 1975; Hall & Davis, 1975; Hogan, 1973, 1974; Lickona, 1976; Rest, 1974b), the present study emphasized the dimension of moral reasoning. The understanding of the development of moral reasoning given here is consonant with the moral theories posited by Baldwin (1906), Dewey (1959), and Mead (1934), and is derived from the cognitive-developmental theory of moralization of Piaget (1965, 1967) and Kohlberg (1963, 1969a, 1976; Kohlberg, Colby, Speicher-Dubin, & Lieberman, 1975), as elaborated by Turiel (1966, 1969, 1973a, 1974a), Rest (1973, 1974a, 1974b, 1976), and Selman (1971, 1975, 1976; Selman & Byrne, 1974).

#### Rationale for the study

According to cognitive-developmental theory, the development of moral reasoning involves the acquisition of new modes of moral thought and the extension of these to new domains of moral decision making. The individual is



said to acquire these new modes through a self-regulated process of transformation and displacement of preceding modes as a result of interaction with the social environment. Such development in the moral domain parallels the individual's general cognitive and affective development, but is distinct from these. While general cognitive and affective development are said to be necessary for the development of moral reasoning, they are, nevertheless, not sufficient of themselves to ensure such development. In addition, the individual must experience cognitive and affective conflict in connection with moral issues, leading to a state of disequilibrium. The conflict is resolved through a process of equilibration, which is the interaction of assimilation and accommodation, assimilation being understood as the adaptation of experience to existing moral judgment structures, and accommodation as qualitative structural modification as a result of experience. The process is descriptive of either the extension of an existing structure to a new domain of moral problem solving, termed horizontal *décalage*, or the development of a qualitatively new mode of moral thought, termed vertical *décalage*. In either case, whether through lateral extension of existing moral modes or through the acquisition of new modes, development is achieved (Kohlberg, 1972a; Piaget, 1965, 1967, 1970; Piaget & Inhelder, 1969; Rest, 1974a, 1974b; Turiel, 1969, 1973a).





Such an understanding of cognitive and affective conflict as mediating the development of moral reasoning provides a strong rationale for the empirical investigation of teaching style in relation to pupils' moral reasoning. Since change represents the developmental outcome of the individual's interaction with his environment, it follows that an environment which stimulates the child to restructure his moral experiences is more likely to facilitate development than one which encourages the child to merely recall specific moral knowledge. Consequently, a style of teacher-pupil interaction which keeps the minds of the children open to new information, interpretations, evaluations, and possibilities, through a process of sharing and comparing--such a style would be expected to stimulate the acquisition of new modes of moral problem solving and the extension of these to new domains.

However, cognitive-developmental theory would appear to set limits to the amount of new experience with which the child can successfully cope. In this theoretical framework, structural change is postulated to occur, not in a strictly synchronous fashion, but rather through a gradual process of stabilization and consolidation during which the acquired structure is extended to new domains of application over a period of years (Flavell & Wohlwill, 1969; Langer, 1969; Piaget, 1967, 1970; Rest, 1974b). Piaget (1970) described two types of assimilation through which



this process takes place, namely, recognitory assimilation and generalizing assimilation. It is through the process of generalizing assimilation that the lateral extension of a structure is accomplished. Therefore, a classroom situation in which exclusively cognitive memory and convergent thought processes are encouraged may be expected to tend towards the repetition of familiar experiences, and hence to emphasize recognitory assimilation. On the other hand, however, a style of classroom interaction which involves predominantly divergent thought processes, with little opportunity for cognitive memory, convergent, and evaluative thought processes, would appear to fail to provide sufficient opportunities for either recognitory or generalizing assimilation, and hence for stabilization and consolidation. Consequently, it is expected that a style of teacher-pupil interaction appropriate for developmental change in the moral domain would involve a flexible combination of memory operations, convergent thinking, divergent thought processes, and opportunities for evaluation, when dealing with problem solving in the moral domain.

Langer (1969) and Turiel (1969) have pointed out that it is not sufficient for the child to be merely exposed to cognitive conflict; to be disequilibrating, the conflict must be experienced by the child. While the experience of conflict is covert in nature, nevertheless certain external indications may be available, such as





overt responses to environmental stimuli associated with conflict, and evidence in responding that the conflict has been perceived. This would suggest that a pupil who responds more frequently to problems presented by the teacher, or who does so in a more cognitively complex style, would give evidence of having experienced the conflict contained in the problem.

Cognitive-developmental theory, therefore, posits the need both for the felt experience of cognitive conflict and for opportunities for consolidation. Pedagogical theory would suggest a parallel between cognitive conflict and the stimulation of divergent thought processes on the one hand, and between opportunities for consolidation and the stimulation of convergent thought processes on the other. These parallels, however, need to be tested in classroom situations. Furthermore, pedagogical theory suggests that participating more frequently and at a higher cognitive level in classroom interaction would give evidence of the actual experience of cognitive conflict, and therefore, in keeping with cognitive-developmental theory, be associated with developmental change. This, too, needs to be tested.

In addition to teacher style and pupil class participation, sex and IQ differences in relation to moral reasoning warrant investigation. While sex differences have been found to be associated with level of moral reasoning in adults (Holstein, 1972), the findings on sex



differences in school-age samples have been inconsistent (Turiel, 1973b). Turiel concluded that differential rates of development found between the sexes is related to social setting. Consequently, there is reason to examine the relationship between school setting and sex differences in moral reasoning. Finally, while cognitive-developmental theory holds that intellectual development is an essential, but not sufficient, requirement for moral reasoning (Kohlberg, 1969a), the nature of the relationship between IQ differences in pupils and the development of moral reasoning warrants further research.

#### Statement of the problem

The purpose of the study was to investigate the relationships between styles of teacher verbal behaviour, pupil class participation, sex, and IQ, and the development of moral reasoning in sixth-grade pupils.

Specifically, the problem was posed in terms of the following questions:

Are there significant relationships between style of teacher verbal behaviour and developmental change in moral reasoning among the pupils?

Are frequency and cognitive level of class participation by the pupils significant factors in the development of moral reasoning?

Are sex and IQ significant factors in the development of moral reasoning?



### Definition of terms:

The terms used in the study are defined as follows:

Teacher verbal behaviour: defined operationally as the teacher's score on the Teacher Opening-Closing Behaviours Scale. Teacher verbal behaviours were classified according to the type of intellectual operations elicited from the pupils as evidenced in their responses.

Intellectual operations: major kinds of activities carried out by the intellect in the processing of information. These include cognitive memory operations, convergent thinking, evaluative thinking, and divergent thinking processes (Guilford, 1956, 1966; Guilford & Hoepfner, 1971).

Cognitive memory operations: the simple reproduction of facts through such processes as recognition, rote memory, and selective recall (Gallagher et al., 1967).

Convergent thinking: the generation of certain fully determined, predictable conclusions from a number of facts or associations (Gallagher, 1964; Guilford, 1959).

Evaluative thinking: the judgment of actions, opinions, solutions, or persons according to some value continuum (Gallagher, 1964; Guilford, 1956, 1959).

Divergent thinking: the search for a variety of unpredictable alternative solutions, opinions, associations, or interpretations from given information (Gallagher, 1964; Gallagher et al., 1967; Guilford, 1956, 1959).





Opening behaviours: teacher cues eliciting evaluative or divergent intellectual operations, as evidenced in pupil responses expressing a variety of viewpoints, solutions, or evaluations. Opening behaviours stimulate ongoing teacher-pupil interaction (Macdonald & Zaret, 1968, 1970).

Closing behaviours: teacher cues eliciting cognitive memory or convergent intellectual operations, as evidenced in pupil responses expressing specific, predictable answers, or closure regarding viewpoints or solutions. Closing behaviours terminate teacher-pupil interaction (Macdonald & Zaret, 1968, 1970).

Moral reasoning: defined operationally as the pupil's score on the Kohlberg Moral Judgment Scale.

Frequency of Class Participation: a pupil rating based upon the number of times the pupil was observed to participate verbally in class discussions.

Cognitive Level of Class Participation: a teacher rating of the cognitive complexity of the pupils' day-to-day verbal responses.

Issue usage: the definition of a moral problem in terms of a particular content or dimension, such as persons, objects, or actions. The issues related to the moral reasoning dilemmas used in the study are Punishment, Property, Affiliation Roles, Life, Contract-Trust, and Law (Kohlberg et al., 1975; Rest, 1973, 1975, 1976; Rest, Cooper, Coder, Masanz, & Anderson, 1974).



### Significance of the study

A number of studies investigating the development of moral reasoning in children of elementary school age have attempted experimentally to stimulate development through systematic interventions (Blatt & Kohlberg, 1973; Keasey, 1973, 1974; Rest et al., 1969; Sullivan, 1975; Turiel, 1966, Turiel & Rothman, 1972). The present study is significant in that it is a naturalistic one, examining the influence of factors already present in the classroom situation. Determining whether naturalistic factors such as the one investigated in the study have a significant effect upon developmental change in moral reasoning among the pupils provides useful information about the importance of social setting in relation to moral development.

Several studies have investigated mediating factors within the child which are postulated or demonstrated to be associated with the development of moral reasoning (Keasey, 1971; Krebs & Kohlberg, 1973; Moir, 1974; Selman, 1971; Selman & Byrne, 1974; Sullivan, McCullough, & Stager, 1970; Tomlinson-Keasey & Keasey, 1974; Tracy & Cross, 1973; Turiel, 1969, 1973b). The present study is significant in that it analyzed not only pupil variables such as class participation, IQ, and sex differences, but factors outside the child as well, namely, the effect of the teacher's style of verbal behaviour upon the development of the child's moral reasoning. While at least one study





(Holstein, 1972) has examined the effect of such external influences as the role of the parents in such development, no previous study has reported findings regarding teacher effect in a naturalistic setting upon the pupils' development of moral reasoning.

The majority of studies investigating developmental change in moral reasoning have allowed only a short period of time, ranging from one day to several weeks, between the pre- and posttest administrations of the Kohlberg Moral Judgment Scale. The present study is significant in that a much longer time, almost an entire school year, elapsed between the two administrations. Comparison of data for shorter time-lapse studies with those from longer time-lapse studies is important for a better analysis of the rate of developmental change. Such data are also important for evaluating the usefulness of present instruments for measuring short-term developmental change in moral reasoning.

Furthermore, the administration of pre- and post-tests allows analysis not only of the amount of change over a period of time, but also permits investigation into the nature of that change. The present study not only investigated the amount of change that occurred, relating this to specific environmental factors, but in a post hoc analysis it also examined the issue usage associated with levels of moral reasoning, thus providing further data regarding the theory of issue usage presented by Kohlberg



and his associates (Kohlberg et al., 1975), and investigated and elaborated by Rest (1973<sup>4</sup>, 1975, 1976; Rest et al., 1974).

Studies concerned with developmental change in moral reasoning have emphasized stage change, consequently recommending such procedures as +1 reasoning to stimulate developmental change. This study is significant in that it opens the way for day-to-day educational prescriptions facilitating development within stages as an essential aspect of the ultimate developmental goal of stage change.



## CHAPTER II

### Review of the Related Literature

The psychology of moral development has been investigated from various viewpoints, including those of psychoanalysis, personality theory, behaviourism, social learning theory, and cognitive-developmentalism. In psychoanalytic theory, Freud explained moral feelings, thoughts, and constraints in terms of the basic personality mechanism of the superego (Graham, 1972; Hall & Lindzey, 1957; Turiel, 1967). The salience of his insights is evidenced by the continued use of a refined psychoanalysis in the therapy of neurotic guilt, and by attempts to relate psychoanalytic theory to more recently developed theories of moralization (Gilligan, 1976). In contrast to the clinical approach, Hartshorne and May (1928, 1929, 1930) initiated the empirical study of moral character traits, which others continue to investigate (Havighurst & Taba, 1949; Kay, 1969; Peck & Havighurst, 1960). More recently, Hogan (1970, 1973, 1974) proposed a five-dimensional model of moral character and personality variables, while Eysenck (1964, 1976) explained moral behaviour in terms of personality type and conditioned anxiety.

On the assumption that moral behaviours are a class of socially approved conduct, behaviourists such as Skinner (1971) explained moral development as learning to respond to extrinsic, especially social, rewards for approved





behaviour. In contrast, social learning theory posits internal behavioural controls which are both affective and cognitive, and which function independently of the external rewards and punishments through which they were originally learned. Aronfreed (1969, 1976), for instance, explained conscience and moral behaviour in terms of learned affective associations, both aversive and rewarding, coupled with learned cognitions which are reasons supporting particular prohibitions and commands. In a review of empirical and theoretical studies to provide an integrated social learning theory of morality, Mischel and Mischel (1976) related modeling, vicarious and self-reinforcement, expectancies, and goal-setting to cognitive and behavioural competencies for morality and self-regulation. However, in social learning theory, learning and development are essentially the same process, so that in the last analysis, moral development remains identifiable with socialization.

In contrast, cognitive-developmental theory distinguishes learning from development, and understands moral development as a self-regulated, interactive process. Like social learning theory, cognitive-developmentalism assigns an important role to cognitive competencies, both in moral reasoning and in relation to moral feelings, moral values, and moral behaviours. Unlike social learning theory, however, cognitive-developmentalism conceptualizes morality and moral development as not identifiable with social



approbation and socialization. Accordingly, this theory was selected as the framework for the study.

In order to provide an overview, the literature related to the following areas was examined:

- (a) Cognitive-developmental theory of moral development.
- (b) The logical-operational foundations of preconventional and early conventional moral reasoning.
- (c) Stage transition within cognitive-developmental theory of moral development.
- (d) Research methodology in the cognitive-developmental approach to moral development.
- (e) Research into the conditions for moral development among school-age children from a cognitive-developmental perspective.
- (f) Systems for observation of teacher-pupil interaction related to pupil cognitive conflict.

#### Cognitive-developmental theory of moral development

A cognitive-developmental theory of moral development was proposed by Piaget (1965, 1967) and expanded by Kohlberg (1958, 1963, 1969a; Kohlberg et al., 1975). Using a series of interviews involving dilemma situations, Piaget (1965, 1967) defined a two-stage theory of moral development, the first stage being characterized by unilateral respect for adults and heteronomous obedience to adult authority, and the second by mutual respect and autonomous reciprocity in social interaction. Piaget holds that such



development towards maturity in the moral realm parallels and interacts with the general intellectual and affective development of the child, these being both a limitation to and a necessary but not sufficient condition for development in the moral domain. In addition, interaction with the social environment is also essential for moral development. In Piaget's moral theory, the heteronomous stage is the outcome of interaction between the child's preoperational cognitive-affective structures and his experience of adult constraint in the social environment. The autonomous stage develops gradually as a function of the child's growing freedom from adult constraint and his developing capacity to relate to the social environment in a reciprocal manner, with a consequent gradual emphasis upon intentionality and the development of subjective responsibility in moral judgment. Piaget (1965) documented his two-stage theory of moral development by an analysis of children's attitudes towards rules, their experience of moral constraint, and their sense of justice. According to his (1965, 1967) theory and research, autonomous morality is generally achieved by the age of 12 or 13, with the attainment of formal operations in the logical domain, provided the necessary social experience is also available.

Piaget's stages of moral judgment have been criticized (Kohlberg, 1963, 1969a; Turiel, 1973a) as not meeting his own criteria (Piaget, 1960) for a developmental stage





sequence, as characterized by changes in quality, form, and competence. A review of research based on Piaget's two-stage theory concluded that the various characteristics of heteronomous and autonomous morality constitute dimensions of moral development, rather than integrated stages of moral thought (Lickona, 1976). Nevertheless, Piaget's general investigative approach and his interactive, structural-stage theory provided the foundation for research and theorizing in the moral domain within a cognitive-developmental framework.

Kohlberg (1963, 1969a, 1976; Kohlberg et al., 1975), using a similar approach of interviews based on dilemma situations, expanded Piaget's two-stage theory into a three-level, six-stage theory, with the moral orientation of each stage characterized as follows:

Level I: Preconventional moral reasoning

Stage 1: Heteronomous morality

Stage 2: Individualism, instrumental purpose, and exchange

Level II: Conventional moral reasoning

Stage 3: Mutual interpersonal expectations, relationships, and interpersonal conformity

Stage 4: Social system and conscience

Level III: Postconventional, or principled, moral reasoning

Stage 5: Social contract or utility and individual rights

Stage 6: Universal ethical principles

(Kohlberg, 1976, pp. 34-35)



A seventh stage, defined in terms of an ontological-religious and cosmic orientation, has been hypothesized but not empirically verified (Kohlberg, 1971c, 1973a, 1973b). Kohlberg's cross-cultural investigations reported support for the hypothesis that these stages define qualitative differences in structures which follow an invariant sequence, form generalized structured wholes, are successively more elaborated, differentiated, and integrated, and imply universality of sequence under varying cultural conditions (Kohlberg, 1963, 1969a, 1976; Kohlberg et al., 1975; Piaget, 1960).

In contrast to social learning theory which views moral development as the direct acquisition of a set of rules and the conditioning of behaviour in accordance with social norms (Aronfreed, 1969; Bandura, 1969), cognitive-developmental theory defines moral development as the self-regulated organization of the individual's moral structures as a result of interaction with the social environment. The developing individual imposes his own structures on the environment (assimilation), and his structures are qualitatively changed through social experience (accommodation). The developing structures represent successive transformations of ways of thinking and feeling about the social world, about right and wrong, and about the self in relation to others. Moral structures, then, are self-regulated conceptual frameworks and problem-solving



strategies which represent qualitatively different modes of organizing one's social and moral world. These modes imply characteristic strategies in dealing with moral problems: each stage attends to characteristic stimuli, organizes these according to characteristic concepts and categories, and employs characteristic integrating principles and synthesizing operations in the decision-making process (Kohlberg, 1971a, 1976; Kohlberg et al., 1975; Piaget, 1967, 1970; Pinard and Laurendeau, 1969; Rest, 1974a; Turiel, 1966, 1969, 1973a).

Kohlberg's stage definitions, particularly at the principled level, have been criticized as intuitive, arbitrary, content-bound, and culturally biased, and his claim of universality of moral stages as derived from normative philosophy rather than from empirical evidence (Kurtines & Greif, 1974; Rest, 1974b; Simpson, 1974, 1976). Kohlberg has also been criticized for his tendency to confuse reasoning with reasons, or structure with content, in his definition of stages (Crittenden, 1972; Turiel, 1973a), for confusing moral judgments with social-conventional judgments (Turiel, 1974b), and for referring to his six-stage typology as depicting moral development as a whole rather than as stages of moral judgment (Rest, 1974b).

Both Alston (1971) and Crittenden (1972) criticized Kohlberg's identification of the moral domain with the principle of justice without adequate empirical support.





Alston questioned Kohlberg's methodology of investigating developmental approximations to an arbitrarily selected criterion of "moral", and then using these approximations as the basis of prescriptivity on how people ought to reason about moral problems. Crittenden criticized Kohlberg's identification of the moral domain with justice as either too narrow an interpretation of the moral domain or too broad a notion of justice, and pointed out the difficulty of arguing for a single, ultimate principle of morality without at the same time advocating a particular moral system. Crittenden also questioned whether all moral problems take the form of a conflict between competing moral demands, and observed that a more comprehensive understanding of morality is required if issues of personal commitment, self-definition, and the formulation of ideals and their practical implications are to be given due recognition as essential elements of the moral domain.

While the higher stages have been criticized for their content-oriented definition, particularly their identification with the principle of justice, the lower stages have been more structurally defined, especially in the more recent (post-1972) literature. Since these earlier stages constitute the main concern of the present study, a more detailed analysis of the developmental process involved in their formation follows.



The logical-operational foundations of preconventional and early conventional moral reasoning

Since the domain of moral judgment is defined in cognitive-developmental theory as the area of interpersonal interactions involving an "ought", the child can be considered as exercising some form of moral judgment as soon as he perceives any constraints on his interpersonal actions (Kuhn, Langer, Kohlberg, & Haan, 1972; Piaget, 1965). At this preliminary moral stage, Kohlberg's Stage 1, there is a fusion of physical and psychological realities: the child does not differentiate between the objective, physical properties of an object or action and those which are subjective or psychological. From this underlying egocentrism follows the non-relational quality of preliminary moral thinking, with its "ought" deriving from constraints imposed by persons having the physical power to enforce their commands, and its judgments of the value of an act in terms of physical consequences. Stage 1 judgments, consequently, are oriented towards an unquestioning obedience to authority figures and the avoidance of punishment. Although the acquisition of early concrete operational thought in the logical domain is seen as a necessary condition for the development of preconventional moral reasoning (Kohlberg, 1976), nevertheless the structures of Stage 1 moral reasoning exhibit characteristics of preoperational thought with its lack of differentiation between



the objective physical and subjective psychological aspects of an object or action. The necessity of engaging in intersubjectivity accompanied by an "ought" when reasoning in the moral domain renders difficult the achievement of moral structures parallel to the structures of the logical domain, with a resultant developmental lag or *décalage* in the moral domain (Kuhn et al., 1972; Turiel, 1969).

From the initial stage of undifferentiated accommodation to the objective in the moral domain, the child gradually succeeds in differentiating the physical properties of an object from his own psychological functions relating to that object. The unstable equilibrium between accommodation and assimilation characteristic of preoperational thought results in a radical change from the objectivity characterizing Stage 1 reasoning to the almost total subjectivity characteristic of Stage 2 moral reasoning. The child who earlier fused objective and psychological realities now assimilates the objective world in terms of his own psychological reactions towards that world, so that the moral value of an object or action is now derived from its relation to the child's psychological desire or motivation. "Right" action then becomes that which is instrumental to the child's own needs and desires: What is right = What I need or What I want. The second major advance of Stage 2 reasoning lies in the ability to conceive of another person's status as subject in relation





to an object and, consequently, the recognition of the other's right to act in accordance with his own instrumental needs. However, this rudimentary intersubjectivity allows only for nonreciprocal role-taking: the child does not yet comprehend the other individual as reciprocally conceiving him in this same status as subject. Consequently the child has no awareness of the expectations of others towards himself, and therefore no capacity for settling interpersonal claims except by exchange or assertion. The result is the instrumental need orientation characteristic of Stage 2 moral reasoning, with its advance over Stage 1 in terms of the differentiation of subject and object, but with its own characteristic fusion of the "right" or "moral" with personal needs and desires, and its inability to role-take in a reciprocal fashion (Kohlberg, 1963, 1976; Kuhn et al., 1972; Lee, 1971; Turiel, 1969, 1973a; Rest, 1974a; Selman, 1971, 1975, 1976; Selman & Byrne, 1974).

It is the movement into reciprocal role-taking that differentiates the child's reasoning at the conventional level from his preconventional moral reasoning. Movement into the conventional level is characterized by a clearly delineated change in cognitive orientation: the child begins to conceive of himself as subject from the perspective of the other. Since he now recognizes that others are making subjective judgments about his own actions, his orientation shifts from his own instrumental needs to a



concern for how others will evaluate his actions and what expectations they have of him. The child is now able to role-take the position of a generalized other and to derive normative values: What is "right" is derived from the values held by all the individuals in one's reference group, rather than from a particular actor's instrumental needs and desires (Stage 2), or from a specific external force (Stage 1). The radical advance of early conventional reasoning over the preconventional level is, therefore, the development of reciprocal role-taking, increased intersubjectivity, and consideration of intentionality in making moral judgments. This new awareness of the evaluations and expectations of others results in the interpersonal concordance or personal approval orientation characteristic of Stage 3 moral reasoning. There is, however, a fusion of fact and norm, of what "is" with what "ought" to be, at this stage, so that what is morally "right" tends to be defined in terms of what most people or most role occupants actually do, without differentiation from what one ought to do in such a role. There is also a naive assumption that all values are shared, and, consequently, that everyone would evaluate the self or any other actor in the same way. As a result, there is no basis for choosing between the conflicting norms or values of the different actors in a moral situation. Stage 3 reasoning, therefore, is characteristically unstable and vacillating (Kohlberg et al.,



1975; Kuhn et al., 1972; Selman, 1971, 1975).

While the child of eleven years of age is already beginning to acquire formal operations in the logical domain, reasoning in the moral domain lags significantly behind at this stage of development, and more closely parallels the structure of concrete operational thought with its particularistic emphasis. Thus, while the beginnings of formal operational thought generally occur at age eleven, the same logical structures of abstract classification and generalization do not begin to appear in the moral domain until at least age thirteen (Kuhn et al., 1972). Kohlberg (1971a) found that while level of moral reasoning at age ten was a poor predictor of level of moral reasoning in adulthood, level at age thirteen had excellent predictive value ( $r = .78$  to  $.92$ ). Evidently the child's moral development between the ages of eleven and thirteen is highly mobile, and therefore this age is considered a crucial one for educational intervention (Kohlberg & Turiel, 1971).

#### Stage transition within cognitive-developmental theory of moral development

Unlike psychoanalytic theory which holds that all developmental change is an outcome of biological changes in the organism, and in contrast to social learning theory which maintains that change originates from the social world, cognitive-developmental theory holds that





stage change represents the developmental outcome of the individual's interaction with his environment. Accordingly, moral values and judgments are not derived from any innate criteria of "right" and "wrong", nor internalized directly from the cultural environment through imitation and conditioning or the process of identification, but rather they derive from the individual's "active attempts to organize social experience" (Turiel, 1973a, p. 736). The interactive nature of developmental change, therefore, implies that the conditions for that change originate from two main sources, namely, the cognitive-affective changes within the individual, and secondly, changes within his social environment. Development is thus seen as a process of self-regulated, progressive equilibration. The cognitive-developmental conception of equilibration involves both equilibrium within structures, or internal consistency, and equilibrium in the interaction with the environment. Consequently, if the individual's existing moral structure is in conflict with his existing cognitive structures, disequilibrium results. Similarly, if his existing moral structure is inadequate for dealing with his experiences in the social environment, conflict or disequilibrium will result (Kohlberg, 1963, 1969a, 1971a, 1976; Kohlberg et al., 1975; Kohlberg & Turiel, 1971; Langer, 1969; Piaget, 1965, 1967, 1970, 1971; Piaget & Inhelder, 1969; Turiel, 1969, 1973a, 1974a, 1974b).

Disequilibrium, then, may originate from the



following sources: (a) conflicting demands within the social environment; (b) conflict between the individual's own structures and his experiences; (c) conflict between the individual's own structures and his behaviour; (d) inter-structural conflict, or the influence of development in one domain on development in another; and (e) intra-structural conflict, or stage mixture within the same domain (Festinger, 1957; Kuhn et al., 1972; Langer, 1969; Turiel, 1969, 1973a; Turiel & Rothman, 1972; Vygotsky, 1962). But whether its source is internal or external, the experience of disequilibrium is the central dynamic in moral development.

In order to restore equilibrium, compensatory activity is required. The individual may attempt to reduce the disequilibrium in one or more ways: he may attempt to do so by denying some cognitive or affective aspects of the moral conflict through the process of assimilation, thus reducing the conflict to dimensions manageable to his existing moral structures; he may extend his present structures to include new moral situations through horizontal *décalage*; or he may develop a new, qualitatively different way of dealing with the moral conflict through the process of accommodation and the movement into a new moral stage. While the first way of responding to moral conflict does not lead to developmental change, it is nevertheless a common way of dealing with moral conflict. Because of its relationship to the problems of fixation and fluidity in development, it is of



importance in any consideration of moral development.

Kohlberg (1963, 1971a; Kohlberg & Turiel, 1971) emphasized that programs of moral development should not aim at teaching some specific moral contents, but rather at developing the organizational structures by which the child conceptualizes, defines, and resolves moral problems. Because the development of structures is a self-regulated process, stage change cannot be directly taught, but only stimulated through the introduction of cognitive conflict or disequilibrium into the child's thought processes. Langer (1969), following Piaget (1971), differentiated two major parameters in the equilibration process: the organizational, or intellectual, parameter; and the energetic, or affective, parameter. Both intellectual and affective disequilibrium are necessary conditions for development. It is, therefore, not sufficient for logical inconsistencies to be present in the environment; the child must feel the disequilibrium, whether consciously or not, before he can recognize that something is wrong and be motivated to change his conceptual activity. Turiel (1966, 1969) has shown that exposure to moral reasoning one stage above the child's modal stage supporting two incompatible positions in a moral dilemma is effective in creating such cognitive-affective conflict, and, consequently, in leading to stage change.

While exposure to reasoning one stage above the





child's modal stage has generally been recommended as a principal means of disequilibrium and stage change, the mere modeling of +1 reasoning has been called into question as an effective strategy (Keasey, 1973; Rest, 1974a). Rest (1974a) contended that the presentation of models is not essential to structural change, since cognitive-developmental theory describes the acquisition of new structures in terms of the individual attempting to reorganize his own logical processes, rather than learning from a model.

The importance of social perspective and social participation in mediating stage change have also been emphasized (Keasey, 1971; Selman, 1971, 1975, 1976; Selman & Byrne, 1974). The provision of role-taking opportunities is consequently essential to developmental change, particularly in the earlier moral stages where the child's limited skill in taking the perspective of another circumscribes his ability to make increasingly adequate moral judgments.

Analysis of issue usage (Kohlberg et al., 1975; Rest, 1973; Rest et al., 1969; Rest et al., 1974) has shown that entrance into a higher stage of moral reasoning typically occurs with a different content issue at different stages of moral reasoning. Accordingly, experience of cognitive conflict in the appropriate entering issue was suggested as an important means of stimulating moral stage change.

Stage change, however, is a gradual process involving



numerous experiences of cognitive and affective conflict, as well as many opportunities for role taking and for the verification of new responses before such a major cognitive reorganization is likely (Flavell & Wohlwill, 1969; Langer, 1969). The gradualness of developmental change has been evidenced by several longitudinal studies (Holstein, 1973; Keasey, 1973; Kohlberg & Kramer, 1969; Kuhn, 1976; Moir, 1974; Turiel, 1966). In the studies covering the longest time periods (Holstein, 1973; Kohlberg & Kramer, 1969), fewer than one-third of the subjects moved up one stage over a three-year period. Consequently, Rest (1974b, 1976) warned against a simplistic understanding of developmental change which implies that stage change is abrupt and complete, rather than gradual, inconsistent, and unstable. He further contended that Kohlberg's (1969a, 1971b, 1972a) analysis takes account only of stage change, whereas development in logical consistency and explicitness within each stage are also important aspects of developmental change. Rest (1974a) emphasized that educational interventions must be concerned not only with stimulating stage change, but also with facilitating horizontal development by extending the full use of an acquired structure to new content domains and problem areas, and with preventing fixation at the lower stages by stimulating developmental fluidity.



## Research methodology in the cognitive-developmental approach to moral development

Investigations into moral development within a cognitive-developmental framework make use of the research methodologies established by Piaget (1965) and Kohlberg (1958, 1972b; Kohlberg et al., 1975), or of some adaptation of these methods. Although research with very young children has generally used Piaget's clinical interview methodology, several simplified versions of Kohlberg's scale have been developed for use with children aged four to ten (Damon, 1975; Kuhn, 1976; Lee, 1971; Selman & Byrne, 1974). An objective measure of moral reasoning, the Defining Issues Test (DIT), in which subjects rate and rank the issues involved in moral dilemmas, was constructed by Rest and his associates (Rest et al., 1974). While the DIT has been shown to have good validity and reliability (Rest, 1975, 1976; Rest et al., 1974), it is, however, not recommended for use with subjects below the age of fourteen (Rest, 1975).

Piaget's clinical interview methodology for assessing moral judgment involves open-ended dilemma situations and role-taking tasks associated with the four dimensions of moral judgment identified by Piaget (1965). Piaget's dilemmas assessing objectivity versus subjectivity in intentionality have been criticized as necessarily directing the child's attention towards consequences in making moral judgments (Bearison & Isaacs, 1975; Berndt & Berndt,





1975; Breznitz & Kugelmass, 1967; Chandler, Greenspan, & Barenboim, 1973; Constanzo, Coie, Grumet, & Farnill, 1973; Crowley, 1968; Turiel, 1966), and his projective measure of immanent justice as eliciting differential levels of response according to the study subject's cultural familiarity with the story conditions (Magowan & Lee, 1970). While there is considerable evidence of response consistency within a particular area of judgment, there is marked variability from one area of judgment to another (Lickona, 1976). Consequently, while Piaget's clinical interview provided the methodological basis for assessing the cognitive and affective skills related to the development of moral judgment in very young children, recent studies have been largely concerned with the refinement of Piaget's methodology.

Following Piaget, Kohlberg (1958) developed a series of nine open-ended dilemmas designed for analyzing the moral reasoning of ten- to sixteen-year-olds using the clinical interview method. The original 1958 scoring system and its 1969 version used both a sentence scoring method (Kohlberg, 1958; Kohlberg et al., 1975), and a global scoring or story rating method (Kohlberg, 1958; Porter & Taylor, 1972). Interjudge agreement for the 1958 and 1969 scoring systems are generally reported in the .90 range for trained scorers (Blatt & Kohlberg, 1973; Kohlberg & Kramer, 1969; Turiel, 1966). Test-retest reliability over a one-year interval



was .84 (Blatt & Kohlberg, 1973; Kohlberg et al., 1975).

In order to develop a more structural scoring system, Kohlberg and his associates revised both the interview and the scoring methods in 1972, using a structural issue rating method on four stories. The sentence unit having proven too small and the story unit too large for structural analysis, the issue now became the unit of analysis and classification. Issue scores were converted to global scores by percentaging across issues. Two forms of the interview were developed, consisting of four stories for each form (Kohlberg, 1972b). Interjudge agreement in studies using the 1972 system are variously reported as 66% (Rest, 1975), 70% (Kohlberg et al., 1975), and 86% (Saltzstein, Diamond, & Belenky, 1972) for major stage, and 94% for agreement within one-third of a stage (Kohlberg et al., 1975). An interrater reliability coefficient of .82 was reported for moral maturity scores using structural scoring (Rest, 1975). Percent agreement on test-retest using the 1972 system was given as 88% for the same stage and 94% within one-third stage (Kohlberg et al., 1975). However, as noted by Rest (1975), no details are provided concerning age range, length of interval between testing in the test-retest reference, or other pertinent procedures related to reliability estimates.

Revisions continued, and the 1975 standardized issue scoring system was developed, with six issue scores derived from three stories. The criterion concept, a structurally-



derived, stage-differentiated moral judgment on an issue, became the model for scoring. Forms A and B of the interview now consisted of three stories, each with fixed issues and problems (Kohlberg, 1976; Kohlberg et al., 1975). Percent interjudge agreement on major stage using the 1975 system was reported as .98 (Rest, 1975). However, no data are available on the intercorrelation of Forms A and B of the 1975 system.

Kohlberg's structured projective test of moral judgment has been criticized for the variability and complexity of both administration and scoring procedures, for the potential for scorer bias in its coding procedures, and for lack of direct evidence of both validity and reliability (Anastasi, 1976; Kurtines & Greif, 1974; Rest, 1974b, 1975, 1976; Rest et al., 1974; Simpson, 1974). Anastasi (1976) stressed the need for data on internal consistency of responses to individual dilemmas, particularly since these responses are combined to yield an overall index of moral reasoning maturity. She also noted the lack of data on the short-term stability of the individual's moral judgment stage as assessed by the Scale. The comparability of subjects' spontaneous responses to the open-ended questions of the Scale, as well as the influence of IQ, verbal facility, and other test-taking sets and attitudes upon the free-response method employed by the Scale, have also been questioned (Kurtines & Greif, 1974; Rest, 1975, 1976; Rest





et al., 1974).

Critics have suggested that certain content features of the Scale may confound research results. Kurtines and Greif (1974) noted interdependence in dilemmas, thus reducing the range of possible responses, while Lieberman (1971) found that the individual dilemma partially determined the stage of the response, resulting in performance discrepancies across the Scale. A significant tendency for moral judgment dilemmas involving actors with closer personal ties to elicit a higher-stage perspective than those involving actors with more distant ties was found by Gash (1976), suggesting content bias in the Scale. Simpson (1974) contended that the sophistication of language and content associated with higher-stage assignment indicated cultural bias rather than universal moral judgment structure.

Turiel (1973a, 1974a) pointed out a confusion between stage transition and regression in earlier versions of the scoring procedures, particularly in relation to the Kohlberg and Kramer (1969) study which theorized a "meta-ethical regression" on the basis of late-adolescent responses. Turiel's critique played an important role in the more careful delineation of stage and transitional characteristics, and consequently in the development of increasingly content-free, structurally-defined coding procedures.

It should be noted that a number of the cited criticisms, particularly those dealing with administration and



scoring procedures, were directed towards the original 1958 and 1969 methodology. Because of the general unavailability of the 1972 and 1975 instruments, however, many researchers and reviewers have continued to use the earlier, less standardized versions of the Moral Judgment Scale.

In responding to his critics, Kohlberg (1976) emphasized that the validity of a test of moral judgment must be defined in terms of construct validity, or theoretical fit, rather than prediction to an external criterion such as behaviour, and asserted that the 1975 scoring system "goes as far toward standardization as is possible while maintaining theoretical validity" (p. 46). While citing data to indicate that stage of moral judgment is a better predictor of moral behaviour than traditional measures of moral development, Kohlberg nevertheless rejected the use of moral behaviour as a proper external criterion for validating a test of moral judgment (Kohlberg, 1969b, 1976; Kohlberg & Mayer, 1972). Although evidence indicates that moral judgment is necessary but not sufficient for moral behaviour, the relationship between judgment and action has yet to be conceptualized within a cognitive-developmental theory of moral development (Kohlberg, 1976).

While notable advances have been made in the standardization of the Moral Judgment Scale since 1972, it continues to be time-consuming and difficult to administer (Rest, 1975, 1976; Simpson, 1976), requiring considerable training



in interviewing and scoring procedures (Kohlberg et al., 1975), as well as background in structural-stage theory of development in general. Rest (1974b, 1975, 1976) stressed the danger of identifying and assessing stages of moral judgment and moral development as a whole by means of one type of measure exclusively, and urged the development of a variety of instruments and formats for collecting moral judgment data. Kohlberg (1976), however, maintains that the use of his methodology is essential for testing theoretical propositions derived from the cognitive-developmental theory of moral stages.

Research into the conditions for moral development among school-age children from a cognitive-developmental perspective

The development of Kohlberg's Moral Judgment Scale made possible the investigation of environmental conditions which tend to promote the development of moral reasoning. The paradigmatic design for research in this area arose out of Turiel's (1966) study of invariant sequence in moral stage development. In his treatment sessions using three Kohlberg dilemmas, seventh-grade boys were individually exposed to moral reasoning at a stage either one below, one above, or two above their own modal stage, as determined by prior testing on the other six dilemmas of the 1958 Kohlberg Scale. A control group was also pretested on the same six dilemmas. Subjects and control group were retested for





Moral Judgment scores on all nine dilemmas. Exposure to +1 reasoning, in contrast to -1 or +2 treatment, resulted in small but significant increases in Moral Judgment scores on the three treatment dilemmas, with marginally significant increases in scores on the other six dilemmas. Turiel's analysis provided at least tentative support for the notion of invariant sequence, and for the generalization of moral concepts from the treatment dilemmas to the new dilemmas on the posttest. His research also suggested that +1 reasoning was an apt treatment for stimulating stage progression.

Intervention by +1 reasoning. In line with this, Blatt and Kohlberg (1973) investigated the effects of guided peer discussion of moral dilemmas, characterized by conflict arousal through questioning and disagreement, and the presentation of reasons one stage above the subject's spontaneous usage. The treatment lasted for twelve weeks, with one hour of discussion each week. The experimental group was tested before the treatment began, and retested at the end of the twelve-week period and again one year later. Experimental subjects showed a significantly greater increase in Moral Maturity scores compared to the control group ( $p < .01$ ). A further study was carried out with subjects from lower socio-economic groups with basically the same treatment. In the second study, however, the 1972 structural issue rating method was used in scoring responses rather than the 1958 sentence and global scoring methods



used in the first study. Although the experimental subjects in the second study also showed a significant increase in Moral Judgment scores compared to the control group ( $p < .05$ ), the increase was smaller than in the first study. The smaller change may be attributed either to the different social class in the study samples, or to the difference in scoring procedures used in the two studies. Similar data indicating the effectiveness of +1 reasoning as an intervention was found by Rest, Turiel, and Kohlberg (1969), and by Keasey (1973).

In their study to analyze the effectiveness of +1 interventions, Rest, Turiel, and Kohlberg (1969) found that their fifth- and eighth-grade subjects preferred advice at stages higher than their own, with +1 advice being preferred for structural reasons and +2 advice for content reasons. Advice below their own stage was categorized as the worst advice. As for comprehension, they found that subjects recalled more -1 advice than any other; that as the stage level of the advice increased beyond the subject's modal stage, recapitulation decreased in accuracy; and that there was a general tendency to distort advice to the subject's own level or below, with disliked advice showing more distortion to the -1 level than preferred advice.

In view of these findings, comprehension of and preference for stages of thought relative to one's own were seen as indicative of a natural hierarchical relationship



between modes of thought. The effectiveness of +1 reasoning as an intervention was related to this hierarchy. Keasey (1974), however, reanalyzed these data (Rest et al., 1969) and data from a further study among senior high school students (Rest, 1973). Since individuals do not consistently differentiate +1 and +2 reasoning (Rest et al., 1969), and since some individuals indicate preference for stages which they are unlikely to comprehend (Rest, 1973), Keasey concluded that there is evidence for a two-level rather than a hierarchical preference for stages of moral reasoning, viz., for same-stage and higher-over-lower-stage reasoning. If a two-level interpretation of the data is correct, it implies that +1 interventions are not always apt for stimulating the disequilibrium necessary for stage progression. Moreover, in reviewing their data, Blatt and Kohlberg (1973) noted that change in Moral Judgment scores for individual subjects was commensurate with their expressed interest in the discussions, supporting Langer's (1969) theorized relationship between developmental change and the felt experience of disequilibrium. This leaves open the possibility that the thorough questioning and the disagreement may have been as effective a part of the treatment as the presentation of +1 reasoning.

Intervention by teaching method. The value of questioning and of structured class discussion was tested in a project carried out by Sullivan and associates (Sullivan,





1975) in which they compared a control class with an experimental class taught by carefully designed teaching methods. During the first year of the project, an experimental class of fifth graders ( $N = 20$ ) was involved twice a week in mini-courses that encouraged reasoning on value issues, using a theoretical discussion method in which the teacher took a strong leadership role, raising and responding to questions. During the following year in sixth grade, an event approach such as simulated town meetings or courtroom trials was used for the twice-weekly periods. The design of these learning experiences highlighted episodes stimulating moral reasoning at a higher stage than that of the pupils. A significant difference in moral judgment scores for the experimental class was found between the pretest and the first posttest at the end of the first year, and between the first and the followup posttest at the end of the second year. Comparison with a control group ( $N = 21$ ) at a nearby school revealed no significant difference between the groups on the pretest and first posttest scores, but a significant difference on the second posttest. The researchers concluded that the experimental teaching methods were effective in promoting the development of moral reasoning because they provided opportunities for decision making and conflict resolution.

Intervention by presenting opinions. In order to identify more clearly the effective element in interventions for stage progression, Keasey (1973) exposed his fifth- and



sixth-grade subjects either to one-sided presentation consisting of arguments supporting one opinion in a dilemma, two-sided presentation consisting of arguments supporting both sides of a dilemma, or to reasoning one stage above their modal stage. One-sided presentation produced significantly more opinion change than exposure to two-sided presentation ( $p < .005$ ), and exposure to +1 reasoning was more effective than exposure to same-stage reasoning ( $p < .05$ ). Although subjects exposed to a higher-stage model showed significantly greater treatment effect after one day, all experimental groups showed the same amount of upward-stage change compared to the control group after two weeks. Differential effects in opinion and reasoning change among the subjects led Keasey to conclude that the two processes are independent.

To further test the relationship between the two processes, Keasey (1974) compared sixth-grade girls and college coeds on their rating of two types of responses to moral dilemmas. One type of response consisted of opinions as to how the dilemma should be resolved, while the second type of response provided moral reasons at various stages supporting the opinion. Subjects, particularly the preadolescent girls, rated moral judgments in which the opinion agreed with their own pre-established opinion significantly higher than disagreeing opinion ( $p < .005$ ). Opinion agreement exerted a greater influence than stage of reasoning



for both groups. In a followup experiment with different subjects, Keasey (1974) again asked subjects to rate responses involving both agreeing and disagreeing opinions, but compared effects of exposure to reasoning at one stage above and one stage below the subject's modal stage. Findings were confirmed from the first study, indicating the greater relative importance of opinion agreement over stage of reasoning ( $p < .005$ ). Moral judgments containing +1 reasoning were rated significantly higher than those containing -1 reasoning ( $p < .005$ ). The two experiments provided evidence that while both opinion agreement and stage of supportive reasoning influence evaluations, the two components do not appear to interact. His studies, then, gave support to Keasey's (1973) suggestion that individuals resolve disequilibrium in one of several ways, and that resolution leading to upward stage change is largely dependent upon the individual's readiness for such change.

Intervention by behavioural change. A stage-specific readiness for intervention also received support in a study where the intervention required subjects to make a behavioural choice (Turiel & Rothman, 1972). A number of studies have examined the effect of stage of moral development on behaviour, and in general found that the higher the stage of moral reasoning the more probable the congruent moral behaviour (Kohlberg, 1969b; Krebs & Kohlberg, 1973).





In contrast, Turiel and Rothman (1972) examined the effects on moral reasoning of behaviour as well as of advice. The dominant stage of moral reasoning of each subject was determined using six dilemmas from the original Kohlberg Moral Judgment Scale. The pretest was followed by an experimental situation in which subjects were required to choose whether to stop or continue an experiment. Before choosing, experimental subjects were exposed to +1 reasoning supporting one behavioural choice and -1 reasoning supporting the other behavioural choice. The reasons advanced were adapted from Kohlberg's 1958 coding forms. Subjects made a choice, and were interviewed by the experimenter concerning their reasoning preferences. Control subjects were given the same choice situation, but were not exposed to reasoning. Compared with control subjects, no shift in behavioural choice was found in Stage 2 and 3 subjects as a result of the reasoning presented. However, +1 reasoning led to a behavioural shift for Stage 4 subjects. A greater number of subjects preferred +1 statements, except for those whose behavioural choice was consistent with a -1 alternative. These subjects showed no clear preference for either +1 or -1 statements. One week after the experimental situation, subjects were again tested for stage of moral reasoning using five of the pretest dilemmas and three new dilemmas to test for generalization to new domains. No significant stage changes were found in the posttest.



Turiel and Rothman concluded that while Stage 2, 3, and 4 subjects all showed a preference for +1 reasoning, only those reasoning at Stage 4 integrated the two domains of reasoning and behaviour, suggesting a developmental progression from segregation to integration of differentiated domains. The authors also suggested that while exposure to +1 reasoning may not have immediate effects upon the individual's own level of moral reasoning, nevertheless coordinating one's behaviour with +1 reasoning may lead to disequilibrium between reasoning and behaviour, and consequently to a reorganization of one's mode of reasoning.

Correlates of stage change. The foregoing intervention studies indicate that environmental or instructional conditions which present +1 moral reasoning tend to stimulate the development of moral reasoning. But these studies also indicate that the resultant increases in moral judgment scores are small (Keasey, 1973; Turiel, 1966), and in some cases not immediately measurable (Turiel & Rothman, 1972). In order to identify desirable instructional conditions more precisely, it is useful to review studies of a number of correlates of moral reasoning change, viz: stage mixture, role-taking ability, cognitive development, moral knowledge, and sex differences.

The small change in moral reasoning scores produced by intervention studies indicate that the change process is gradual rather than synchronous. Turiel (1969) found



further evidence of this in the relationship of stage mixture to stage change. In a reanalysis of data from seven different sources including Kohlberg (1958), Owen (1968), and Kramer (1968), as well as new data gathered for the purpose, Turiel examined the stage mixture of a large number of subjects aged ten, thirteen, and sixteen at the time of testing. All subjects had been administered very similar moral judgment interviews, and the original coding system had been used in scoring. A variation score, or measure of stage mixture, was computed, with higher variation scores reflecting greater stage mixture. Findings indicated that stage mixture in an individual is related to the developmental process, with stage mixture being greater during periods of more rapid development. Urban children were more advanced than rural children at ages ten and thirteen, and showed more stage mixture. At age sixteen, however, rural subjects reached the stages already achieved by the younger urban children, and showed a much greater degree of stage mixture than at ages ten and thirteen. Older subjects at lower stages showed little stage mixture, suggesting fixation of moral reasoning processes at a lower level, and less susceptibility to higher-stage thought. Turiel concluded that while variation can typify an active process of change, lack of variation may be associated with either fixation at a lower stage or a temporary period of stable, equilibrated functioning. Stage mixture was thus





concluded to be an essential aspect of the developmental process. In a more recent study of 76 seventh-grade subjects, however, Tracy and Cross (1973) did not find an association between stage change and stage mixture.

In the same study, Tracy and Cross pointed to another aspect of stage mixture. Noting that initial level of moral judgment emerged as the most significant variable associated with shift of moral judgment in their intervention study, they emphasized the need to control for initial level of moral reasoning in structuring intervention studies.

A second correlate of moral reasoning is role-taking ability. Selman (1971) explored the relationship between role-taking ability and moral reasoning in 60 children aged 8 to 10. The sample was stratified for sex and age. Selman administered Kohlberg's Moral Judgment Scale, two role-taking tasks (Flavell, 1968), and a conventional measure of intelligence. He found a significant association between preconventional moral reasoning and nonreciprocal role taking, and between conventional moral reasoning and reciprocal role taking on each of the role-taking tasks ( $p < .01$ ). However, findings were limited to children of middle-range intelligence. Selman observed that children of a mental age of approximately ten are beginning to make use of their newly developed role-taking skills in making conventional moral judgments. One year later, ten subjects who scored low in both measures were retested. In this



smaller sample, attainment of reciprocal role taking was again shown to be necessary but not sufficient for conventional moral reasoning. Selman emphasized the mediating function of role taking in moral reasoning by contrasting the 'quid pro quo' perspective and self-concern characteristic of Stage 2 reasoning with the Stage 3 focus on the consequences of one's own actions upon the subsequent reactions of one's partner in a dyadic interaction.

In a further analysis of the development of role taking, Selman and Byrne (1974) interviewed 40 middle-class children aged 4, 6, 8, and 10, evenly distributed for sex and age. Subjects were shown two filmstrips, each presenting an open-ended socio-moral dilemma, similar to Kohlberg's 1969 dilemmas but simplified for use with young children. The children's responses to each dilemma were analyzed according to a previously constructed sequence of role-taking levels based on Feffer's (1959, 1971) and Flavell's (1968) analyses, as well as on Selman's previous (1971) research. Findings indicated that role-taking structures are identifiable within the context of moral reasoning in a form and sequence similar to those described in other areas of interpersonal functioning.

In a similar study, Moir (1974) investigated the relationship between scores on role-taking tests and on moral judgment in eleven-year-old girls, reasoning predominantly at a Stage 2 level. Role taking was shown to be



strongly associated with maturity of moral reasoning ( $r = .717$ ;  $p < .005$ ). Results suggested that the emergence of conventional morality is accomplished in a sequence of small transitions, rather than in a synchronous fashion.

Among the consequences of acquiring role-taking abilities are capacities for social participation and for altruistic behaviour. The relationship of these behaviours to moral reasoning has also been investigated. Keasey (1971) obtained measures of moral judgment and social participation from a large sample of fifth- and sixth-grade subjects. Findings supported the hypothesis that stage of moral judgment is positively related to extent of social participation, whether judged by self, peers, or teachers. Rubin and Schneider (1973) concluded that the increase in altruism with age noted in psychological literature and supported by their research findings is, in part, a function of the child's increased ability to decenter.

Increased decentering is a function of cognitive development, which has been examined in a number of studies as a correlative of the development of moral reasoning. Tomlinson-Keasey and Keasey (1974) examined the mediating role of cognitive development in moral reasoning among subjects who were just beginning to acquire formal operations and subjects advanced in formal thought. They administered the Kohlberg Moral Judgment Scale and three Piagetian formal-operational tasks (Inhelder & Piaget, 1958) to 30





sixth-grade girls and 24 college coeds. The systematic relationships found between the stages of cognitive and moral development suggested that while advanced cognitive operations are a prerequisite for principled moral judgment, there is a lag between the acquisition of logical operations and their application to the moral domain. In particular, findings indicated that transition to early formal operations among the twelve-year-old girls in the sample was accompanied by transition to conventional rather than to principled moral reasoning. A comparison of the moral reasoning scores of subjects from both age groups with similar cognitive development revealed a significant difference in moral reasoning ( $p < .001$ ). Formal operations in the logical domain, therefore, were found to be necessary but not sufficient for principled moral thought.

Sullivan, McCullough, and Stager (1970) also examined the relationship of cognitive development and moral reasoning, but located their research in the conceptual-systems framework of Harvey, Hunt, and Schroder (1961) and Hunt (1966), which assumes that the normal course of development under optimal conditions leads to a more flexible orientation towards the environment and the interpersonal world. Their study investigated the relationship between conceptual, ego, and moral development. They correlated scores on the Conceptual Level Questionnaire (Hunt & Halverson, 1964), the Kohlberg Moral Judgment Scale



(Kohlberg, 1958), and Loevinger's Ego Development Test (Loevinger & Wessler, 1968) of a sample of 120 subjects aged 12, 14, and 17. The correlation of scores on the three scales indicated a positive relationship of moral reasoning both to conceptual level and to ego development.

Other studies measuring intellectual ability by conventional quotient methods have consistently found a positive but medium correlation between IQ and stage of moral reasoning for preadolescents. Tracy and Cross (1973), in a study of 76 seventh-grade boys aged 12 to 14, found a correlation of .33 ( $p < .01$ ). Similar results were found by Kohlberg (1964) and Keasey (1971). However, Tracy and Cross also found that although initial stage of moral reasoning was positively related to IQ, upward change was not.

The positive correlation between cognitive development and moral reasoning gives rise to the question of a possible correlation between moral knowledge and stage of moral reasoning. Turiel (1973b) made a comparative analysis of moral knowledge and moral judgment in 210 males and females between the ages of 10 and 16, for three types of schools--progressive, traditional, and parochial. While moral judgment scores among subjects increased with age, moral knowledge test scores decreased with age. Turiel interpreted this finding as an indication that cultural values are interpreted differently as modes of moral



reasoning change.

Turiel's (1973b) study also examined sex differences as a correlate of moral reasoning. He adapted the original Kohlberg Moral Judgment Scale, with its all-male protagonists, to provide both male and female protagonists. In administering the moral judgment tests, the experimenter established all possible combinations of sex of subject, sex of interviewer, and male versus female form of the interview. A five-way analysis of the data yielded no significant interaction effects between these sex-related testing variables. However, an analysis of moral judgment scores indicated that while boys and girls in the sample passed through the same stage sequence, they did so at differential rates. A significant sex-by-age interaction was found ( $p < .05$ ), with girls being more advanced than boys at ages ten and thirteen, and boys scoring slightly higher than girls at age sixteen.

In reviewing this finding, Turiel summarized the findings of sex differences from a number of studies across a wide spectrum of ages (Haan, Smith, & Block, 1968; Hendry, 1960; Holstein, 1969; Krebs, 1967; Lockwood, 1970; Sullivan et al., 1970; Weisbroth, 1970), and concluded that the inconsistent sex differences in research findings were attributable to social setting rather than to inherent sex differences in either the form or potential level of moral development.





The foregoing correlational studies are suggestive of various social and instructional conditions that would be effective in promoting progression through the stages of moral reasoning. Conditions, for instance, which provide for cognitive development through decentering and role-taking opportunities would be helpful. Cognitive conflict appears to be directly related to the development of moral reasoning, so that it is useful to be exposed to discussion topics which create interest; to questions, opinions, and reasoning slightly above one's present level of competence; to moral knowledge which becomes a point for questioning; and to the requirements of having to make a behavioural choice. Furthermore, since differential rates of progress in moral reasoning may be associated with different levels of intelligence and with sex-role differences, some modification in instructional conditions would seem to be required for pupils of high as against low intelligence, and for boys as against girls.

Naturalistic studies. These possible implications for social and instructional settings have so far not been tested by naturalistic studies. In fact, the effects of naturalistic settings have been noted in only a few studies. Turiel (1973b) found that subjects from the progressive school in his sample were more advanced in moral reasoning than those from the traditional school, who in turn were more advanced than subjects from the parochial school



( $p < .001$ ). However, the assumption that a parochial school is necessarily a different type of school from either the progressive or traditional types, rather than located somewhere along a progressive-traditional continuum, lessens the generalizability of Turiel's findings regarding types of schools.

Among the requirements for naturalistic studies is the availability of instruments for the observation and quantification of human interaction in particular social settings. To date such instruments have not been developed within a cognitive-developmental framework. In order to record the instructional environment of schools, it is necessary to turn to instruments developed within another theoretical framework for the analysis of classroom interaction.

#### Systems for observation of teacher-pupil interaction related to pupil cognitive conflict

A number of systems of classroom interaction analysis have been constructed which analyze teacher-pupil verbal exchange from the standpoint of the intellectual operations involved. These include the systems developed by Flanders (1960, 1970), Smith and Meux (1962), Aschner and Gallagher (Aschner et al., 1963, 1965), Taba and Elzey (1964), Bellack and associates (Bellack, Kliebard, Hyman, & Smith, 1966), Davis and Tinsley (1968), and Macdonald and Zaret (1968, 1970). Guilford's (1956, 1959, 1966; Guilford & Hoepfner,



1971) model of intellectual functioning has provided the theoretical framework for several of these systems of analysis. While both Piaget (1963; Piaget & Inhelder, 1969) and Guilford analyzed the intellectual operations involved in the processing of information by the organism, Guilford did not focus on the developmental stages of intellectual operations. He proposed a model of intellectual functioning which involved five operations, namely, cognition, memory, convergent production, divergent production, and evaluation. In Guilford's analysis, cognition describes the intellectual processes of recognition, discovery, and comprehension, whereas memory refers to the retention of what has been cognized. While cognition factors "represent functions on the receiving end of behaviour sequences" (Guilford, 1956, p. 269), convergent and divergent thinking operations involve the production of new information from what has been cognized. Guilford described convergent production as the channeling or controlling of thought towards one correct response, as distinct from divergent production which involves movement in several different directions and the production of a variety of responses, with the product not completely determined by the given information as in convergent production. Since convergent thinking results in one predictable outcome, multiple-choice tests are well suited to the measurement of such ability. The assessment of divergent thinking, on the other hand, requires open-ended





or completion tests. The fifth intellectual process described by Guilford, that of evaluation, involves judgments as to the correctness, adequacy, or functionality of what is known, remembered, or produced.

Using Guilford's (1956) structure-of-intellect model, Aschner and Gallagher (Aschner et al., 1963, 1965; Aschner, 1963; Gallagher, 1964; Gallagher & Aschner, 1968; Gallagher, Aschner, & Jenné, 1967) developed a system of classroom verbal interaction analysis in which the observation categories corresponded to Guilford's four primary categories of intellectual operations: Cognitive Memory, Convergent Thinking, Divergent Thinking, and Evaluative Thinking. A final category, that of Routine, was added to cover miscellaneous classroom activities and management. Productive Thinking was defined to include convergent, divergent, and evaluative processes through which the individual produces new facts and ideas from past and present information and experience. The system was tested in 12 junior high school classes of intellectually superior children in a variety of subject matters. Differences between boys and girls in the production of various types of thinking approximated the .10 level of significance (Mann-Whitney U Test), suggesting power to discriminate between the categories.

Macdonald and Zaret (1968, 1970) utilized the Guilford model to classify teacher-pupil verbal interaction along a process continuum of Openness-Closedness in verbal



behaviour. Unlike the Aschner-Gallagher system, however, Macdonald and Zaret included only divergent and evaluative processes in Productive Thinking, and developed a new dimension, that of Reproductive Thinking, to include convergent thinking and cognitive memory operations. The unit of verbal interaction analyzed by Macdonald and Zaret is the critical incident, which involves verbal interaction between teacher and pupil, or between pupils, its completion being marked by a critical shift, or reorientation of verbal interaction. Since the eliciting of Productive Thinking stimulates ongoing verbal exchange, it reflects Openness in classroom interaction, while the eliciting of Reproductive Thinking terminates interaction, thus reflecting Closedness in interaction. The Macdonald-Zaret system was tested on 9 elementary school classes, with 90% agreement between observers on the identification of critical shifts and 81% agreement on the classification of verbal behaviours being reported. Unlike the findings of many studies which reported only small differences among teachers (Flanders, 1960; Bellack et al., 1966) and small numbers of behaviours classifiable as divergent or evaluative (Smith & Meux, 1962; Meux, 1963), the Macdonald-Zaret (1968) study found a variance among teachers in their sample significant at the .05 level or beyond. This difference may be attributed to the more global behavioural dimensions of Openness and Closedness used in the Macdonald-Zaret system. While this global,



bi-polar dimension of Openness-Closedness discriminates between teaching styles, the subclassifications of the Macdonald-Zaret system are less precisely defined than those of the Aschner-Gallagher system, and consequently require more interpretation by the observer in coding behaviours.

The distinction between Openness and Closedness in teacher-pupil verbal interaction suggests a parallel with the disequilibrium-equilibration process in cognitive-developmental theory. Teaching style which stimulates disequilibrium may be re-ordered in terms of Openness in classroom interaction, while teaching style which does not induce disequilibrium may be described in terms of Closedness in classroom interaction. Because of this parallel, the Macdonald-Zaret system, or an adaptation of it, should provide useful data for a naturalistic study of the effects of teaching style on the development of moral reasoning.

### Research hypotheses

The related literature provided the background for the specific questions posed in the present study regarding teaching styles likely to promote the development of moral reasoning among pupils. The relationship found in the literature between the disequilibrium process and developmental change gives rise to the question of a relationship between Opening as against Closing behaviours in teacher-pupil verbal interaction and developmental change in pupils' moral reasoning. Moreover, since effective disequilibrium





is understood in the literature as a felt experience, the question arises regarding the style of pupil participation most likely to bring about the experience of cognitive conflict, and hence of real rather than presumed disequilibrium. In addition, cognitive development is accepted as a prerequisite for moral reasoning, while level of intelligence is seen to stand in a complex relationship with stage of moral reasoning. These understandings are the basis for questioning the possibility of an interaction between teaching styles, IQ, and the development of moral reasoning. Finally, while theory and research do not posit differences in moral reasoning capacities on the basis of sex differences, they do attribute differential rates of development between boys and girls to social setting. Such findings give rise to the question of a relationship between teaching styles, sex differences, and development of moral reasoning.

In order to answer some of the specific questions raised by the review of the literature and posed in the study, the following hypotheses were tested:

1. There is a significant relationship between teachers' levels of Opening and Closing verbal behaviour and developmental change in pupils' moral reasoning.
2. Initial level and developmental change in pupils' moral reasoning are positively related to the frequency and cognitive level of pupils' class participation.



3. Initial level and developmental change in pupils' moral reasoning are independent of sex differences but positively related to IQ differences.



## CHAPTER III

### Experimental Design and Statistical Procedures

#### General description

In order to test the hypotheses, a study was carried out involving a sample of teachers and pupils at the Grade 6 level. Data were required concerning teacher verbal behaviour, the level of moral reasoning of each pupil at the beginning and the end of the school year under study, the frequency and cognitive level of each pupil's verbal class participation, as well as the sex and IQ of each pupil.

An initial sample of nine teachers was selected, and the classroom verbal behaviour of this sample was observed and quantified. A study sample of three teachers was then selected from this initial group on the basis of their position on the verbal behaviour continuum. Further data concerning classroom verbal interaction were gathered for the study sample. Pre- and posttest measures of moral reasoning were obtained for all pupils of the teachers in the sample, and teachers in this group were asked to rate each of their pupils on the cognitive level of their verbal class participation. Data on sex and IQ were gathered for the pupils in the study sample.

Analysis of the data included the establishment of interrater reliability coefficients on all measures involving co-raters, and tests of the significance of





differences between the various teacher verbal behaviour scores. Analyses of variance and covariance were carried out on the pre- and posttest measures of moral reasoning in relation to style of teacher verbal behaviour, pupil class participation measures, sex, and IQ. In addition to the analyses related to the hypotheses, issue usage on the moral reasoning dilemmas was analyzed in relation to level of moral reasoning, and to sex and class differences.

Inferences were drawn concerning the implications of the study for moral education at this age level.

### Subjects

Since transition from preconventional to conventional moral reasoning is reported to occur most commonly between ages ten to thirteen (Blatt & Kohlberg, 1973; Kohlberg, 1971a; Kohlberg & Turiel, 1971), a sample in this age group was selected. Sixth grade was chosen as the most appropriate level for study, since it is the last year in which pupils spend a large proportion of their class time with one particular teacher.

An initial sample of nine teachers at the Grade 6 level was chosen in consultation with a member of the supervisory staff of the Edmonton Catholic School System. A supervisor familiar with the teaching styles of the teachers at the Grade 6 level was requested to select teachers from schools in similar socio-economic districts of the city who were the home-room teachers for their



present group of pupils for the first time, and who spent at least seventy-five percent of their teaching time with these pupils, including the Religious Education and Social Studies courses. Classes to which pupils had been assigned on the basis of school achievement, test success, or other systematic grouping, were excluded from the reference population.

The supervisor was given a written description of the interaction analysis schema to be used in the study (see Figure 1 and Appendix A), and asked to select nine teachers from the reference population whose teaching styles would be expected to represent as broad a distribution as possible along the desired analytical continuum. Of the nine teachers selected, three were to be expected to use a style of questioning designed to elicit predominantly cognitive memory and convergent thinking processes (high closing behaviours in teacher verbal style), three were to be expected to elicit predominantly evaluative and divergent thinking processes (high opening behaviours in teacher verbal style), and the remaining three teachers were to be expected to use a combination of questions eliciting all four types of intellectual operations (mixed opening and closing behaviours in teacher verbal style). The nine teachers selected were ranked by the supervisor from one to nine (1 = high closing behaviours; 9 = high opening behaviours) on the basis of expectations concerning



## TEACHER OPENING-CLOSING BEHAVIOURS SCALE

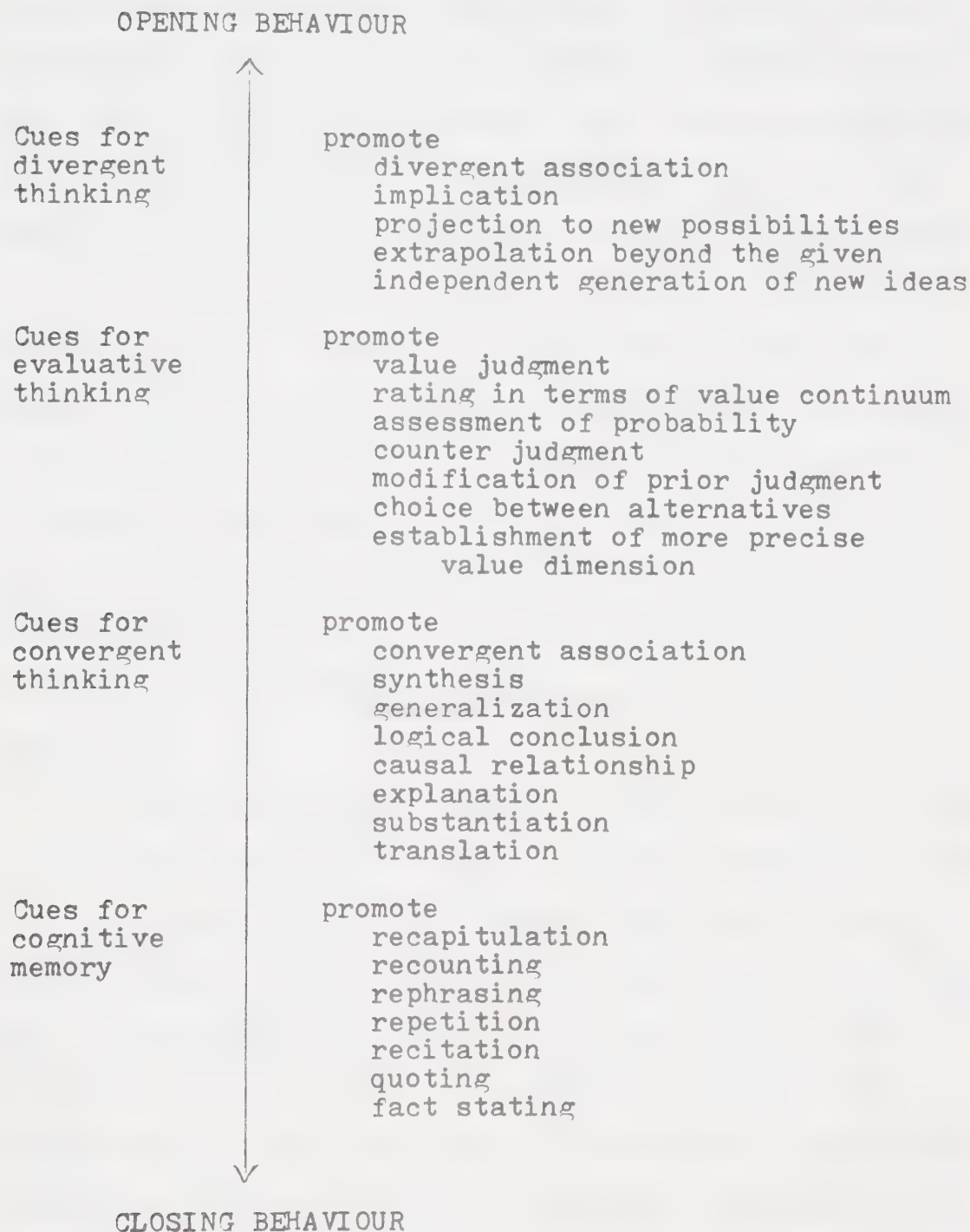


Figure 1. Classification of teacher verbal behaviours as used in the study. (Adapted from Aschner et al., 1965; Gallagher, 1964; Gallagher et al., 1967; Macdonald & Zaret, 1968)





their classroom verbal behaviour. The teachers were then observed by the investigator with the assistance of a co-rater for two contiguous class periods of thirty to forty minutes each, during which the teachers' verbal behaviours were quantified using the Teacher Opening-Closing Behaviours Scale adapted from the Aschner-Gallagher (1965) and the Macdonald-Zaret (1968) analytical schemas. Teachers were ranked by the investigator from one to nine using the obtained scores. The scores of the nine teachers were tested using chi square and differences found to be significant at the .001 level (see Table 1). The interrater reliability coefficient between the supervisor's and the investigator's rankings of the teachers was .95. The investigator's and the co-rater's classifications of the teachers' verbal behaviours showed an overall agreement beyond .90.

Three of the nine teachers, those ranked 9, 7, and 2, were retained for the study. Teacher 9 was clearly the most representative of high opening behaviours. Although Teachers 7 and 8 were placed by the supervisor in the category of expectation of high opening behaviours, their observed styles of questioning exhibited the most even distribution of the four types of intellectual operations. Teachers 3 through 6, while statistically different from Teachers 1 and 2, emphasized convergent thinking and cognitive memory type questions. Consequently, Teacher 7 was



TABLE 1  
Scores of Nine Teachers on  
Teacher Opening-Closing Behaviours Scale

| Teacher | Cues |    |    |    |       | Scores |
|---------|------|----|----|----|-------|--------|
|         | DT   | ET | CT | CM | Total |        |
| 1       | 1    | 0  | 8  | 41 | 50    | 122    |
| 2       | 2    | 9  | 21 | 84 | 116   | 138    |
| 3       | 15   | 1  | 40 | 54 | 110   | 179    |
| 4       | 5    | 7  | 14 | 27 | 53    | 182    |
| 5       | 23   | 10 | 28 | 72 | 133   | 188    |
| 6       | 14   | 26 | 30 | 60 | 130   | 195    |
| 7       | 11   | 15 | 18 | 19 | 63    | 228    |
| 8       | 16   | 14 | 10 | 20 | 60    | 243    |
| 9       | 27   | 14 | 16 | 8  | 65    | 292    |

Differences between Teachers:

1 to 9:  $\chi^2 = 111.06; p < .001$

2, 7, and 9:  $\chi^2 = 54.66; p < .001$

Code:

DT Divergent thinking  
ET Evaluative thinking  
CT Convergent thinking  
CM Cognitive memory



considered as the most representative of a flexible combination of opening-closing behaviours, and therefore as most clearly reflecting the theoretical orientation of the study. Teacher 2 was selected to represent high closing behaviours rather than Teacher 1 since the latter interacted with the pupils markedly fewer times during the observed class periods ( $N = 10$ , 40 critical incidents, compared to  $N = 52$ , 64), of which only one question from the total of 50 could be classified as divergent, and none as evaluative. Teacher 2 also showed more interest and willingness to participate in the study. It was judged that attitudinal factors on the part of the teacher could carry over into the pupils' willingness to cooperate in the somewhat demanding tasks of the study. Consequently, Teacher 2 was selected for the study as the best representative of high closing behaviours in teaching style. Differences between the three teachers were tested using chi square and found to be significant at the .001 level (see Table 1). During the remainder of the study, Teachers 9, 7, and 2 will be referred to as Teachers A, B, and C, respectively, with Teacher A representing high opening behaviours, Teacher B representing mixed opening and closing behaviours, and Teacher C representing high closing behaviours.

These three teachers and their pupils ( $N = 25$ , 28, and 23) formed the sample for the study. The mean chronological age of the 76 pupils in the study was 11 years, 3 months,





at the time of the pretest. Three additional teachers, a random sample of the pupils of two of these teachers ( $N = 10, 10$ ), and the entire class of the third teacher ( $N = 25$ ), were retained as subjects for the pilot tests associated with the study.

### Materials

Instruments were required which would provide measures of

- a) opening-closing verbal behaviour in teaching style;
- b) pupils' level of moral reasoning;
- c) frequency and cognitive level of pupils' class participation.

Materials for use in stimulating discussion of moral dilemmas were also required.

Both the Aschner-Gallagher (1965) and the Macdonald-Zaret (1968) systems of interaction analysis of classroom verbal behaviour analyze the intellectual operations described in Guilford (1956, 1959), and both report adequate measures of reliability. However, neither system in its original form met the specific needs of the present study. Consequently it was necessary to combine and adapt these two systems for use in the study (Bellack, 1974). In the adapted system the four main categories and their subclassifications were defined as in the Aschner-Gallagher System (see Appendix A); the main categories were then regrouped to reflect the Opening-Closing behaviours



continuum of the Macdonald-Zaret System (see Figure 1). A weight of 4, 3, 2, or 1 was assigned to each divergent, evaluative, convergent, or cognitive memory type question, respectively, and an overall score derived from the weighted categorizations. While the fifth category of the Aschner-Gallagher System, that of Routine, was used during the classification process, items in this category of classroom management were not included in the data analysis. Also, while the unit of analysis in the contributing systems consisted of teacher question - pupil answer - teacher response, the focus in the adapted system is on the teacher question alone, thus greatly simplifying the task of observation and classification. Findings indicate that teachers actually do obtain the kinds of responses they elicit in terms of level of thinking, Macdonald and Zaret (1968) reporting congruence in 86% of the cases ( $p = .001$ ), with similar findings in the Aschner-Gallagher (1965) and Guzak (1966) studies. Consequently, the analysis of teacher questions alone was considered adequate (Zaret, 1974). Pupil responses were used, however, to interpret teacher intent where this was unclear (Bellack, 1974). The adapted system was tested by a pair of independent raters on transcripts of classroom verbal interaction, with interrater agreement of 90% being obtained on the number of items to be coded, and absolute agreement of 85% on the classification of these items. In a second testing involving three



independent raters and a transcript there was interrater agreement of 90% on the number of items to be coded, and absolute agreement on 80% of the classifications. On the basis of these tests, the adapted system, hereafter referred to as the Teacher Opening-Closing Behaviours Scale, was considered sufficiently reliable for use in the study. Further measures of reliability were obtained during the study, as reported in Chapter IV.

Pupils' level of moral reasoning was assessed using the Kohlberg Moral Judgment Scale. Since the standardized Forms A and B of the revised Moral Judgment Scale were not yet available, five of the original dilemmas (Kohlberg, 1958; Porter & Taylor, 1970) were used: #I, III, and VIII on the pretest, and #I, III, IV, VII, and VIII on the post-test. Selection of the particular dilemmas was guided by the Porter and Taylor assessments of appropriateness for this age group (Porter & Taylor, 1972), and after consultation with other researchers at the elementary school level (Neureiter, 1973; Rothman, 1974). Three dilemmas were repeated on the posttest to assess direct change in level of moral reasoning, and two new dilemmas were added in order to assess indirect change or generalization to new content areas (Turiel, 1966; Turiel & Rothman, 1972). The 1972 structural issue rating method was used in scoring responses in the present study, with additional guidance provided by the criterion concepts of the 1975 standardized





issue scoring method (Kohlberg et al., 1975).

In addition to scales measuring style of teacher verbal behaviour and level of pupil moral reasoning, an instrument was also required for obtaining data regarding pupil class participation. A simple rating instrument using a 3-point scale was designed to obtain teacher ratings of the cognitive level of class participation of each pupil (see Appendix B).

Two sound filmstrips, "The Trouble with Truth" and "But It Isn't Yours" from the 1972 "First Things: Values" series developed by Guidance Associates in consultation with L. Kohlberg, R. Selman, and T. Lickona, were used to stimulate class discussion of moral dilemmas.

#### Pilot tests of the instruments

The study involved pre- and posttest Moral Judgment Scale responses of 76 subjects. Because of the large number of respondents, the feasibility of using the written procedure rather than the individual taped interview was investigated. Both the preliminary nature of the present study and the need to obtain data from a large number of pupils were judged as lending justification to the use of the written procedure. While the written form has recognized limitations, particularly at this age level, there are precedents for its use (Ewanyk, 1973; Sullivan et al., 1970). In addition, a series of preliminary pilot tests was carried out to test the feasibility of using the



written form with this study sample. Using item-by-item controlled timing procedures, the dilemmas selected for the pretest were administered to two randomly selected pilot samples of 5 boys and 5 girls from each of two classrooms not included in the study sample to test for clarity of instructions, correct timing, and adequacy of results. The responses were scored by trained scorers using the adapted 1972 structural issue rating method. Moral Judgment scores were derived using standard weighting procedures (Blatt & Kohlberg, 1973). The procedure was then repeated with a larger pilot sample of one full class of pupils ( $N = 25$ ), also not included in the study. The adequacy of instructions and timing, as well as the feasibility of administration to a larger group, were thus verified. This group of responses was scored as in the earlier pilot tests. Several months later the Moral Judgment Scale posttest items were administered to the pilot samples to test the administrative procedures and to evaluate retest effects. The posttest responses of the pilot samples were scored and posttest Moral Judgment scores obtained. In the total pilot sample of 45 subjects, the responses of 3 subjects were eliminated as unscorable, and 2 subjects were absent for the posttest, thus reducing the pilot sample to 40 subjects.

Interscorer reliability in the pilot sample was shown to be .92, indicating a satisfactory level of scorability of the written responses. While the written



protocols showed a lack of fully probed responses in some instances, as similarly noted by Haan, Smith, & Block (1968) in their college sample, nevertheless they were comparable to taped interviews of this age group scored by the investigator during training sessions. Furthermore, the range of scores in the pilot group was that generally reported for this age group when structural scoring procedures are used. It was judged, therefore, that given the specific needs and limitations of the present study, and the results of the pilot tests, and despite the further limitations of measurement imposed by this method, that the use of written responses to the Moral Judgment Scale was warranted in the study.

A pilot test of the rating instrument on Cognitive Level of Class Participation was also carried out with the teachers and pupils in the pilot samples, and the format and instructions were found to be satisfactory.

### Research methodology

In early October the Moral Judgment Scale pretest items were administered to the three groups of pupils in the study sample. These were analyzed by trained scorers using the structural issue rating method, and weighted pretest Moral Judgment scores were derived. Following the administration of the pretest, each teacher held a class discussion on the sound filmstrip "The Trouble with Truth". The discussion was taperecorded with the assistance of





personnel from the Instructional Materials Centre of the Edmonton Catholic School System. During the discussion the investigator made a frequency count of each pupil's verbal participation. The taped discussions were transcribed, and each teacher's questions during the discussion were classified using the Teacher Opening-Closing Behaviours Scale. Data regarding the age and sex of each pupil were also gathered at the time of the pretest. IQ scores derived from the Lorge-Thorndike Intelligence Test, and in a few cases from the Primary Mental Abilities Tests, were obtained from school files. IQ scores were not available for 13 pupils in the total sample.

Towards the end of the school year, a second class discussion was held by each of the three teachers in the study sample, this time using the sound filmstrip "But It Isn't Yours". The discussion was again taperecorded, and a frequency count made of each pupil's verbal participation. The discussion was transcribed, the teacher's classified, and a third Teacher Opening-Closing Behaviours Scale score was derived. Mean scores across three observations on Teacher Opening-Closing Behaviours, the main independent variable of the study, were then computed for each of the three teachers in the sample. Pupil frequency scores in class participation were correlated across the two discussions ( $r = .85$ ). A mean Frequency of Class Participation score was derived for each pupil. Teachers



in the study sample rated each of their pupils for Cognitive Level of Class Participation using the 3-point scale designed for this purpose.

The posttest items of the Moral Judgment Scale were then administered to the pupils, eight months after the pretest. The posttest responses were analyzed and posttest scores were expressed in three forms: a direct posttest Moral Judgment score derived from those items on the posttest which were repeated from the pretest; an indirect posttest Moral Judgment score derived from the new items on the posttest; and a total posttest Moral Judgment score derived from all the items on the posttest (Turiel, 1966). The responses of 4 pupils were judged as unscorable, and 3 pupils were absent for either the pretest or the posttest, reducing the sample size to 69 ( $N = 23, 26, 20$ ).

In addition to deriving Moral Judgment scores from the pupils' responses to the items on the Moral Judgment Scale, the responses were also analyzed for issue usage. Percent Issue Usage scores on both the pretest and the posttest were computed for each pupil on six issues namely Punishment, Property, Affiliation Roles, Life, Contract-Trust, and Law. Differences of opinion between the two scorers on both the level of moral reasoning and issue usage dimensions were resolved by discussion.



When all the data had been gathered and scored, measures were available on the following variables:

Teacher Opening-Closing Behaviours

Pupils' Class Group

Age

Sex

IQ

Frequency of Class Participation

Cognitive Level of Class Participation

Pretest Moral Judgment Score

Direct Posttest Moral Judgment Score

Indirect Posttest Moral Judgment Score

Total Posttest Moral Judgment Score

Percent Pretest Issue Usage

Percent Direct Posttest Issue Usage

Percent Indirect Posttest Issue Usage

Percent Total Posttest Issue Usage

### Statistical procedures

Differences between the three class groups from the pretest to the posttest Moral Judgment scores constituted the main hypothesis of the study. The difficulties associated with the measurement of change from pretest to posttest have been well documented (Cronbach & Furby, 1970; Cronbach, Gleser, Nanda, & Rajaratnam, 1972; Harris, 1963; Lord, 1960, 1963; Tucker, Damaris, & Messick, 1966). Accordingly, while recognizing the strict inapplicability of probability statistics to these data, the present study used a variety of analysis of variance and covariance procedures in testing for change. Following Lord (1963), one-way analysis of covariance was used to adjust the posttest Moral Judgment scores for pretest differences by





partialling out that part of the posttest information which is linearly predictable from the pretest score, and to analyze the adjusted posttest scores for differences between the three class groups. An even more rigorous procedure, recommended by Cronbach and Furby (1970), was employed in testing the third and, by extension, the first hypotheses. Here both the pretest score and a second concomitant variable, namely sex in one instance and IQ in another, were partialled out using two-way analysis of covariance procedures, and the adjusted posttest scores analyzed for differences between the three classes. In order to compare results, raw difference scores from the pretest to the posttest were also tested for differences between the three classes using one-way analysis of variance.

In testing the first hypothesis, interrater reliability coefficients were calculated and chi square tests carried out on the Teacher Opening-Closing Behaviours Scale scores of the three teachers in the sample in order to verify that the class groups were exposed to different teaching styles. One-way analysis of variance procedures (ANOVL5) were carried out on the pretest Moral Judgment scores to test for initial differences between the three class groups. The three sets of posttest Moral Judgment scores, adjusted for the pretest, were analyzed for differences between the three class groups using one-way analysis of covariance (ANCOVL5).



The second hypothesis concerned the relationships between measures of pupil class participation and initial level and developmental change in pupil moral judgment. For this analysis the class groups were pooled and all pupils grouped according to high, medium, and low scores for each of the class participation variables. Pretest Moral Judgment score differences between pupils scoring high, medium, and low on Frequency of Class Participation were tested for initial differences using one-way analysis of variance. To test for differences in developmental change in moral reasoning, the three sets of adjusted posttest Moral Judgment scores were analyzed for differences between high, medium, and low scorers on both Frequency and Cognitive Level of Class Participation.

In the third hypothesis the relationships between sex, IQ, and pupil moral reasoning were examined. The pretest Moral Judgment scores were adjusted successively for linearity attributable to sex and IQ, and analyzed for differences between the three class groups. Using two-way analysis of covariance procedures, the three sets of posttest Moral Judgment scores were adjusted for differences in both pretest scores and sex, and in pretest scores and IQ, and tested for differences between the three class groups. The class groups were then pooled and both the pretest and the adjusted posttest scores analyzed for differences between girls and boys, and between pupils



having high versus low IQ scores. IQ rankings in the pooled groups were calculated above and below a median of 108, while the class group analysis used individual IQ scores.

In testing the three hypotheses, Scheffé Multiple Comparison tests of the group means were calculated following each analysis of variance and covariance in order to determine what contributed to the differences between groups.

Although issue usage was not included in the hypotheses of the study, some interesting trends were noted in pupils' responses to the Moral Judgment Scale items, with certain issues appearing to have particular salience at certain phases of development. Consequently, some aspects of issue usage were analyzed descriptively (FORTG). Pupils' usage of each of six issues, namely, Punishment, Property, Affiliation Roles, Life, Contract-Trust, and Law, were calculated in percentage form and analyzed in relation to level of moral judgment, sex, and class group. For the first analysis pupils from all class groups were pooled, then regrouped according to their scores on the pre- and posttest Moral Judgment Scale. Originally six ranges of Moral Judgment scores were established: 116 - 140; 141 - 165; 166 - 190; 191 - 215; 216 - 240; and 241 - 265. However, because of the small number of subjects in the highest interval, the top two intervals were collapsed to form one interval having a range of 216 - 255, thus





reducing the number of ranges to five. The mean percent Issue Usage was calculated on the six issues for each range on the pretest and on the direct and total posttest Moral Judgment scores. In addition to comparing issue usage between the five ranges of Moral Judgment scores, correlation coefficients were calculated between the scorers' expectations regarding issue usage and the actual usage by subjects in each range. Pupils were then regrouped according to sex, and the mean percent Issue Usage calculated for girls and boys on each of the six issues. Lastly, pupils were regrouped according to classes, and the mean percent Issue Usage calculated for each class group on the six issues. A series of tables and graphs illustrating these trends was constructed.

The results of these statistical procedures are presented and analyzed in Chapter IV.



## CHAPTER IV

### Analysis of the Data

#### Hypothesis 1

Hypothesis 1 dealt with the relationship between teacher verbal behaviour as measured by the Teacher Opening-Closing Behaviours Scale and developmental change in pupil moral reasoning. It was hypothesized that the pupils of teachers who use a combination of opening and closing behaviours as defined in the study would show more developmental change in moral reasoning over a school year than pupils of teachers who use either opening or closing behaviours almost exclusively.

Tests of interrater reliability between the two scorers classifying the teachers' verbal behaviours showed an absolute agreement of .85. Results of the chi square tests of the differences between the three teachers for scores on the Opening-Closing Behaviours Scale in two class discussions and between their total scores for the initial observations and the two class discussions are given in Table 2. In all instances the differences between the teachers' scores were significant at the .001 level. Chi square tests of the scores of each teacher across the three observations showed Teachers A and B with a high degree of intra-observation consistency ( $p = .90$  and  $.50$ , respectively; see Table 2). While Teacher C, reflecting high closing behaviours, showed significant differences



TABLE 2  
Scores of Three Teachers on  
Teacher Opening-Closing Behaviours Scale

| Teacher | Observation | Cues |    |     |     |       | Score |
|---------|-------------|------|----|-----|-----|-------|-------|
|         |             | DT   | ET | CT  | CM  | Total |       |
| A       | I           | 27   | 14 | 16  | 8   | 65    | 292   |
|         | II          | 21   | 25 | 14  | 10  | 70    | 281   |
|         | III         | 28   | 20 | 6   | 16  | 70    | 285   |
|         | Total       | 76   | 59 | 36  | 34  | 205   | 286   |
| B       | I           | 11   | 15 | 18  | 19  | 63    | 228   |
|         | II          | 13   | 20 | 35  | 22  | 90    | 225   |
|         | III         | 15   | 25 | 49  | 9   | 98    | 247   |
|         | Total       | 39   | 60 | 102 | 50  | 251   | 235   |
| C       | I           | 2    | 9  | 21  | 84  | 116   | 138   |
|         | II          | 3    | 21 | 38  | 31  | 93    | 195   |
|         | III         | 1    | 16 | 41  | 44  | 102   | 174   |
|         | Total       | 6    | 49 | 103 | 158 | 316   | 170   |

| Differences between Teachers         | Differences within Teachers          |
|--------------------------------------|--------------------------------------|
| I: $\chi^2 = 54.66$ ; $p < .001$     | A: $\chi^2 = .216$ ; $p < .90$       |
| II: $\chi^2 = 17.10$ ; $p < .001$    | B: $\chi^2 = 1.222$ ; $p < .50$      |
| III: $\chi^2 = 27.08$ ; $p < .001$   | C: $\chi^2 = 9.833$ ; $p < .01$      |
| Total: $\chi^2 = 32.11$ ; $p < .001$ | II-III: $\chi^2 = 1.194$ ; $p < .30$ |

CODE: DT Divergent thinking      CT Convergent Thinking  
ET Evaluative thinking      CM Cognitive memory



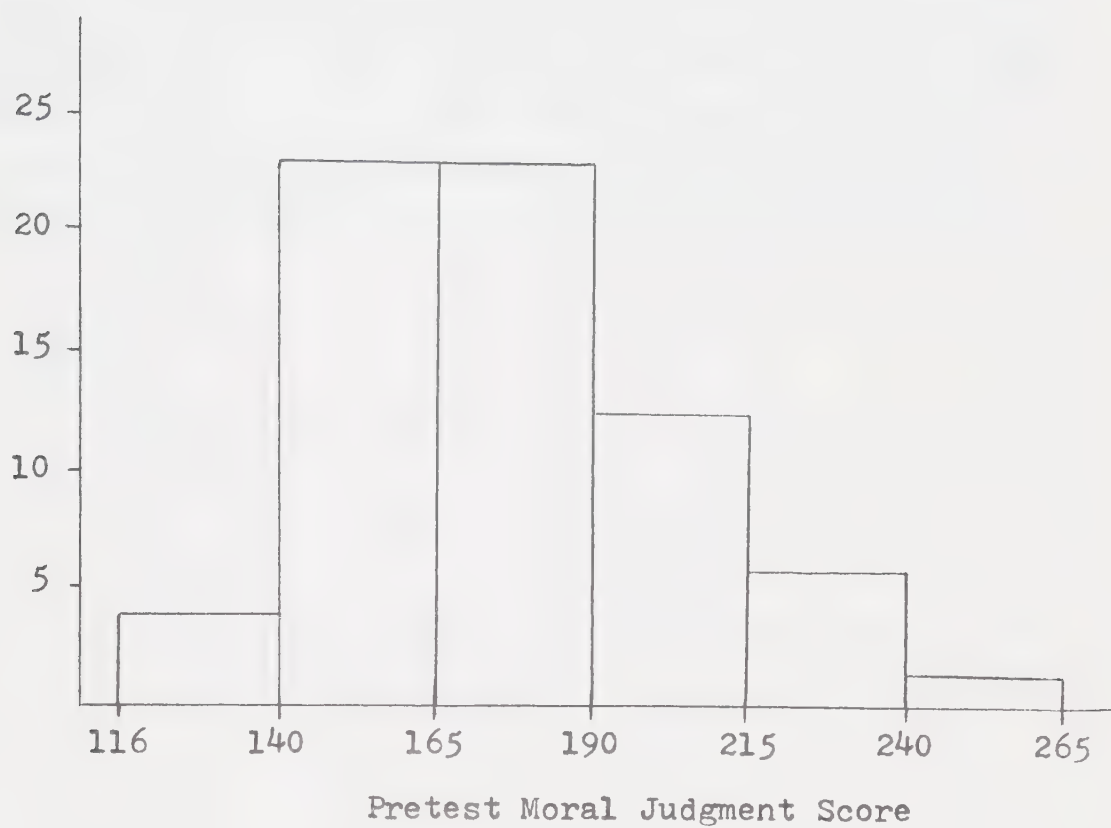


across all three observations ( $p = .01$ ), those between the two class discussions (Observations II - III; see Table 2) were not significant. It should be noted that each teacher was left free to choose the style and content of the initial observation, while the two succeeding observations were influenced by the investigator's choice of a class discussion involving a provocative dilemma, thus necessarily directing the interaction towards more use of opening behaviours. The dissimilarity between the three observations suggest that, left to his own choice, Teacher C would choose a more exclusively closing behaviours style of verbal interaction. Moreover, even when Teacher C's highest score was used to test for differences between the three teachers, the differences were still significant at the .001 level. Consequently, despite the inconsistencies in Teacher C's scores across the three observations, the differences between the three teachers, the main independent variable of the study, were shown to be highly significant.

The pretest Moral Judgment scores ranged from 116 to 250, with the total sample distributed as in Figure 2. Tests of homogeneity of variance here as elsewhere throughout the analysis of the data were shown to be nonsignificant. One-way analysis of variance of the pretest scores indicated that there were no significant differences between the three classes in level of Moral Judgment at the beginning of the school year (see Table 3). A Scheffé Multiple Comparison



Frequency



N = 69

Figure 2. Distribution of pretest Moral Judgment scores.



TABLE 3  
Analysis of Variance: Pretest Moral Judgment Scores  
of Three Class Groups

| Source       | df | MS      | F     |
|--------------|----|---------|-------|
| Group Effect | 2  | 1625.50 | 1.86* |
| Error        | 66 | 875.59  |       |

\* p = NS





of Means for the three groups indicated that Classes A and C were the most different on the pretest ( $p = .17$ ; see Table 4), with Class A having the highest mean score of the three classes.

The posttest Moral Judgment scores were expressed as direct posttest scores, indirect posttest scores, and total posttest scores. As expected, the direct posttest scores showed a general shift upward from the pretest, with the greatest shifts occurring between Ranges 2 to 3, and 3 to 4. A comparison of the distribution of scores for the entire sample from the pretest to the direct posttest is presented in Figure 3.

In accordance with Hypothesis 1, analysis of covariance of the direct posttest scores adjusted for the pretest showed differences between the three classes significant at the .03 level (see Table 5). A Scheffé test between the means (see Table 6) indicated differences between the scores of Classes A and B ( $p = .10$ ) and between the scores of Classes B and C ( $p = .07$ ). Because of the rigour of this test, Scheffé (1959) and Ferguson (1966) recommend the use of .10 as the critical level of significance in this context. Classes A and C were not different from each other on the adjusted direct posttest Moral Judgment scores ( $p = .97$ ). A curvilinear relationship was shown between teachers' scores on the Opening-Closing Behaviours Scale and mean class scores on the Moral Judgment direct posttest (see



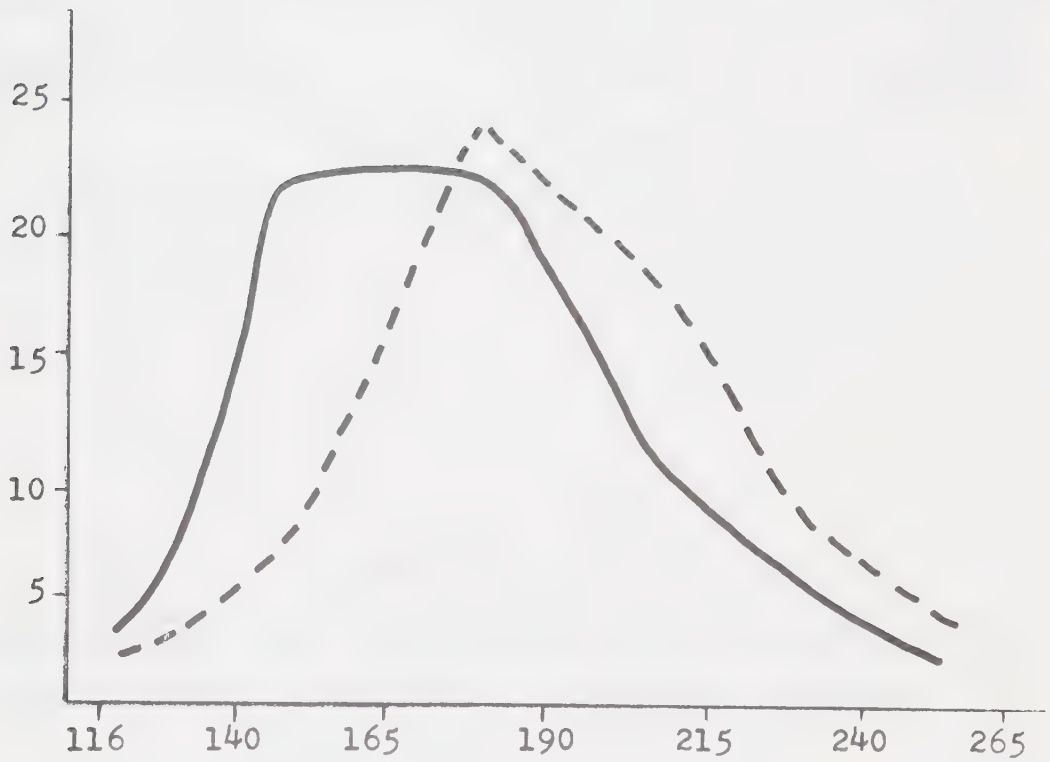
TABLE 4

Probability Matrix for Scheffé Multiple Comparison of Means:  
Pretest Moral Judgment Scores of Three Class Groups

|         | Class A | Class B | Class C |
|---------|---------|---------|---------|
| Class A | 1.000   | .716    | .166    |
| Class B |         | 1.000   | .499    |
| Class C |         |         | 1.000   |



Frequency



Moral Judgment Score

Code:

— Pretest

- - Posttest (Direct)

Figure 3. Distribution of pre-and posttest Moral Judgment Scores.





TABLE 5  
Analysis of Covariance: Adjusted Direct Posttest  
Moral Judgment Scores of Three Class Groups

| Source              | df | MS       | F       |
|---------------------|----|----------|---------|
| Group Effect        | 2  | 1492.82  | 3.58*   |
| Covariate (Pretest) | 1  | 25692.17 | 61.63** |
| Error               | 65 | 416.84   |         |

\*  $p = .033$

\*\*  $p = .000$

TABLE 6  
Probability Matrix for Scheffé Multiple Comparison of Means:  
Adjusted Direct Posttest Moral Judgment Scores  
of Three Class Groups

|         | Class A | Class B | Class C |
|---------|---------|---------|---------|
| Class A | 1.000   | .103    | .967    |
| Class B |         | 1.000   | .071    |
| Class C |         |         | 1.000   |



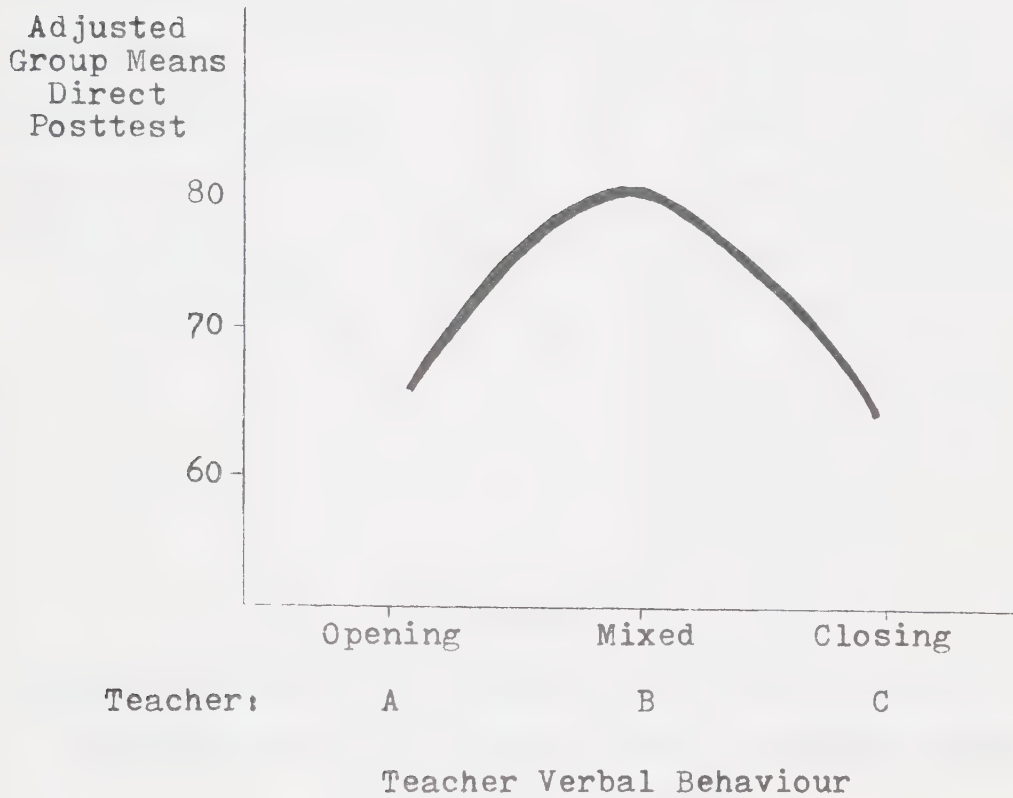


Figure 4. Teacher Verbal Behaviour and adjusted class means on direct posttest Moral Judgment scores.



TABLE 7  
Analysis of Covariance: Adjusted Indirect Posttest  
Moral Judgment Scores of Three Class Groups

| Source              | df | MS      | F       |
|---------------------|----|---------|---------|
| Group Effect        | 2  | 439.27  | .71*    |
| Covariate (Pretest) | 1  | 8955.37 | 14.52** |
| Error               | 65 | 616.86  |         |

\* p = NS  
\*\* p = .000

TABLE 8  
Probability Matrix for Scheffé Multiple Comparison of Means:  
Adjusted Indirect Posttest Moral Judgment Scores  
of Three Class Groups

|         | Class A | Class B | Class C |
|---------|---------|---------|---------|
| Class A | 1.000   | .591    | 1.000   |
| Class B |         | 1.000   | .616    |
| Class C |         |         | 1.000   |





TABLE 9  
 Analysis of Covariance: Adjusted Total Posttest  
 Moral Judgment Scores of Three Class Groups

| Source              | df | MS       | F       |
|---------------------|----|----------|---------|
| Group Effect        | 2  | 996.04   | 2.60*   |
| Covariate (Pretest) | 1  | 16785.87 | 43.77** |
| Error               | 65 | 383.49   |         |

\* p = .08  
 \*\*p = .000

TABLE 10  
 Probability Matrix for Scheffé Multiple Comparison of Means:  
 Adjusted Total Posttest Moral Judgment Scores  
 of Three Class Groups

|         | Class A | Class B | Class C |
|---------|---------|---------|---------|
| Class A | 1.000   | .188    | .977    |
| Class B |         | 1.000   | .144    |
| Class C |         |         | 1.000   |



Analysis of variance between the three classes yielded near significance on the direct change scores ( $p = .059$ ), and nonsignificance on the indirect and total change scores. However, when group size was equalized by a random elimination of subjects, analysis of variance again yielded nonsignificance of differences between the three groups on the pretest scores, but much greater significance in the differences on the direct and total change scores ( $p = .006$  and  $.02$ , respectively), with the indirect change scores again showing no significant differences between the three classes ( $p = .125$ ). A second analysis, again with equal N's through another random elimination of subjects, showed similar results ( $p = .001$ ,  $.08$ , and  $.005$ ) for the three sets of raw change scores. These results, presented in Appendix C, indicate the instability of findings using raw difference scores. The comparison emphasizes the need to specify the method used in analyzing change -- an exigency not always respected in the literature on moral development.

### Hypothesis 2

Hypothesis 2 predicted a positive relationship between measures of pupil class participation and both initial level and developmental change in moral judgment. Analysis of variance of the pretest Moral Judgment scores of the entire sample grouped for high, medium, and low scores on Frequency of Class Participation showed



significant differences between the groups ( $p = .012$ ; see Table 11). A Scheffé test indicated differences between the high and low groups contributed significantly to the differences in the pretest scores ( $p = .013$ ; see Table 12). Analysis of covariance of the three sets of adjusted post-test scores showed no significant differences between high, medium, and low groups on the posttest (see Tables 13, 14, and 15).

Differences between groups for high, medium, and low Cognitive Level of Class Participation on the three sets of adjusted posttest Moral Judgment scores were nonsignificant (see Tables 16, 17, and 18).

The hypothesized relationship between measures of pupil class participation and moral judgment were only partially upheld. As expected, pupils who were observed to participate more frequently in class discussions were shown to have initially higher levels of moral judgment. There were, however, no relationships between higher level in either frequency or cognitive level of class participation as measured and change in moral reasoning.

### Hypothesis 3

Hypothesis 3 concerned the relationships between sex, IQ, and level of moral reasoning. It was hypothesized that both initial level and developmental change in moral reasoning would be independent of sex differences, but positively related to IQ differences, with pupils having



TABLE 11

Analysis of Variance: Pretest Moral Judgment Scores  
for High, Medium, and Low Frequency of Class Participation

| Source       | df | MS      | F     |
|--------------|----|---------|-------|
| Group Effect | 2  | 3798.00 | 4.69* |
| Error        | 66 | 809.76  |       |

\*  $p = .012$

TABLE 12

Probability Matrix for Scheffé Multiple Comparison of Means:  
Pretest Moral Judgment Scores for  
High, Medium, and Low Frequency of Class Participation

| Groups | High  | Medium | Low   |
|--------|-------|--------|-------|
| High   | 1.000 | .381   | .013  |
| Medium |       | 1.000  | .179  |
| Low    |       |        | 1.000 |





TABLE 13

Analysis of Covariance: Adjusted Direct Posttest  
Moral Judgment Scores  
for High, Medium, and Low Frequency of Class Participation

| Source              | df | MS       | F       |
|---------------------|----|----------|---------|
| Group Effect        | 2  | .61      | .001*   |
| Covariate (Pretest) | 1  | 24389.80 | 52.80** |
| Error               | 65 | 461.95   |         |

\* p = NS  
\*\* p = .000

TABLE 14

Analysis of Covariance: Adjusted Indirect Posttest  
Moral Judgment Scores  
for High, Medium, and Low Frequency of Class Participation

| Source              | df | MS      | F       |
|---------------------|----|---------|---------|
| Group Effect        | 2  | 856.84  | 1.41*   |
| Covariate (Pretest) | 1  | 6474.69 | 10.70** |
| Error               | 65 | 605.12  |         |

\* p = NS  
\*\* p = .002



TABLE 15

Analysis of Covariance: Adjusted Total Posttest  
Moral Judgment Scores  
for High, Medium, and Low Frequency of Class Participation

| Source              | df | MS       | F       |
|---------------------|----|----------|---------|
| Group Effect        | 2  | 113.88   | .28*    |
| Covariate (Pretest) | 1  | 15001.67 | 36.55** |
| Error               | 65 | 410.45   |         |

\* p = NS

\*\* p = .000

TABLE 16

Analysis of Covariance: Adjusted Direct Posttest  
Moral Judgment Scores for  
High, Medium, and Low Cognitive Level of Class Participation

| Source              | df | MS       | F       |
|---------------------|----|----------|---------|
| Group Effect        | 2  | 392.14   | .87*    |
| Covariate (Pretest) | 1  | 26258.08 | 58.21** |
| Error               | 65 | 451.10   |         |

\* p = NS

\*\* p = .000



TABLE 17

Analysis of Covariance: Adjusted Indirect Posttest  
 Moral Judgment Scores for  
 High, Medium, and Low Cognitive Level of Class Participation

| Source              | df | MS      | F       |
|---------------------|----|---------|---------|
| Group Effect        | 2  | 249.64  | .40*    |
| Covariate (Pretest) | 1  | 7683.15 | 12.32** |
| Error               | 65 | 623.26  |         |

\* p = NS  
 \*\* p = .000

TABLE 18

Analysis of Covariance: Adjusted Total Posttest  
 Moral Judgment Scores for  
 High, Medium, and Low Cognitive Level of Class Participation

| Source              | df | MS       | F       |
|---------------------|----|----------|---------|
| Group Effect        | 2  | 241.32   | .59*    |
| Covariate (Pretest) | 1  | 16598.60 | 40.72** |
| Error               | 65 | 407.60   |         |

\* p = NS  
 \*\* p = .000





higher IQ scores showing initially higher levels of moral judgment as well as more developmental change over the school year.

As expected, analysis of variance of the pretest Moral Judgment scores of the total sample showed no differences between boys and girls (see Table 19). Also as expected, there were no differences between boys and girls on the direct posttest scores adjusted for the pretest (see Table 20). However, girls scored significantly higher on both the adjusted indirect and total posttests ( $p = .029$  and  $.03$ , respectively; see Tables 21 and 22).

When the direct posttest scores for class groups were adjusted for both the pretest scores and sex through two-way analysis of covariance procedures, differences between the three class groups were found to be marginally significant ( $p = .068$ ; see Tables 23 and 24). As expected, however, sex differences did not contribute significantly to the differences between the three class groups on the direct posttest. While the differences between the three classes on the adjusted indirect and total posttest scores were still nonsignificant, sex differences were significant at the  $.05$  level on the indirect posttest (see Tables 25 and 26), and marginally significant on the total posttest ( $p = .09$ ; see Tables 27 and 28). The meaning of sex differences on the indirect posttest is not clear, and may be related to a confounding of sex and IQ effects within the sample.



TABLE 19  
Analysis of Variance: Pretest Moral Judgment Scores  
for Boys and Girls

| Source       | df | MS     | F    |
|--------------|----|--------|------|
| Group Effect | 1  | 821.00 | .91* |
| Error        | 67 | 898.79 |      |

\* p = NS

TABLE 20  
Analysis of Covariance: Adjusted Direct Posttest  
Moral Judgment Scores for Boys and Girls

| Source              | df | MS       | F     |
|---------------------|----|----------|-------|
| Group Effect        | 1  | 919.36   | 2.08* |
| Covariate (Pretest) | 1  | 26357.39 | 59.66 |
| Error               | 66 | 441.77   |       |

\* p = NS



TABLE 21

Analysis of Covariance: Adjusted Indirect Posttest  
Moral Judgment Scores for Boys and Girls

| Source              | df | MS      | F     |
|---------------------|----|---------|-------|
| Group Effect        | 1  | 2853.52 | 4.93* |
| Covariate (Pretest) | 1  | 8273.52 | 14.31 |
| Error               | 66 | 578.21  |       |

\*  $p = .029$

TABLE 22

Analysis of Covariance: Adjusted Total Posttest  
Moral Judgment Scores for Boys and Girls

| Source              | df | MS       | F     |
|---------------------|----|----------|-------|
| Group Effect        | 1  | 1835.23  | 4.82* |
| Covariate (Pretest) | 1  | 16665.67 | 43.78 |
| Error               | 66 | 380.68   |       |

\*  $p = .03$



TABLE 23

Analysis of Covariance: Direct Posttest Moral Judgment  
Scores for Three Class Groups Adjusted for Pretest and Sex

| Source                | df | MS       | F        |
|-----------------------|----|----------|----------|
| Group Effect          | 2  | 1172.19  | 2.79*    |
| Covariate 1 (Sex)     | 1  | 277.96   | .66**    |
| Covariate 2 (Pretest) | 1  | 24210.19 | 57.66*** |
| Error                 | 64 | 419.86   |          |

\* p = .068  
 \*\* p = NS  
 \*\*\* p = .000

TABLE 24

Probability Matrix for Scheffé Multiple Comparison of Means:  
 Direct Posttest Moral Judgment Scores  
 for Three Class Groups Adjusted for Pretest and Sex

|         | Class A | Class B | Class C |
|---------|---------|---------|---------|
| Class A | 1.000   | .223    | .919    |
| Class B |         | 1.000   | .097    |
| Class C |         |         | 1.000   |





TABLE 25

Analysis of Covariance: Indirect Posttest Moral Judgment  
Scores for Three Class Groups Adjusted for Pretest and Sex

| Source                | df | MS      | F        |
|-----------------------|----|---------|----------|
| Group Effect          | 2  | 154.62  | .26*     |
| Covariate 1 (Sex)     | 1  | 2284.51 | 3.86**   |
| Covariate 2 (Pretest) | 1  | 7366.57 | 12.44*** |
| Error                 | 64 | 592.16  |          |

\* p = NS  
 \*\* p = .05  
 \*\*\* p = .000

TABLE 26

Probability Matrix for Scheffé Multiple Comparison of Means:  
 Indirect Posttest Moral Judgment Scores  
 for Three Class Groups Adjusted for Pretest and Sex

|         | Class A | Class B | Class C |
|---------|---------|---------|---------|
| Class A | 1.000   | .951    | .929    |
| Class B |         | 1.000   | .771    |
| Class C |         |         | 1.000   |



TABLE 27

Analysis of Covariance: Total Posttest Moral Judgment  
Scores for Three Class Groups Adjusted for Pretest and Sex

| Source                | df | MS       | F        |
|-----------------------|----|----------|----------|
| Group Effect          | 2  | 617.30   | 1.64*    |
| Covariate 1 (Sex)     | 1  | 1077.90  | 2.87**   |
| Covariate 2 (Pretest) | 1  | 15052.34 | 40.03*** |
| Error                 | 64 | 376.06   |          |

\* p = NS  
 \*\* p = .09  
 \*\*\* p = .00

TABLE 28

Probability Matrix for Scheffé Multiple Comparison of Means:  
 Total Posttest Moral Judgment Scores  
 for Three Class Groups Adjusted for Pretest and Sex

|         | Class A | Class B | Class C |
|---------|---------|---------|---------|
| Class A | 1.000   | .504    | .864    |
| Class B |         | 1.000   | .221    |
| Class C |         |         | 1.000   |



Analysis of variance of the pretest Moral Judgment scores of the total sample grouped for high and low IQ showed a significant difference in the pretest scores associated with high IQ ( $p = .03$ ; see Table 29). Analysis of covariance of each of the adjusted posttest scores also showed significant differences between high and low IQ groups (see Tables 30, 31, and 32). These results are consonant with the expectation that IQ effects partly determine differences in Moral Judgment scores.

After partialling out the linearity attributable to IQ, there were no differences between the three class groups on the pretest Moral Judgment scores (see Table 33). There were, however, marginally significant differences between the three classes on the direct posttest scores adjusted for both the pretest and IQ ( $p = .07$ ; see Table 34). A Scheffé test showed that the differences between Classes B and C contributed significantly to the group differences ( $p = .059$ ; see Table 35). The IQ effects on the direct posttest were also marginally significant ( $p = .096$ ). While the differences between the three class groups on the indirect and total posttest scores adjusted for both the pretest and IQ were not significant, IQ effects were significant in both instances ( $p = .02$  and  $.03$ , respectively; see Tables 36 and 37).

Hypothesis 3 regarding the independence of initial Moral Judgment scores and developmental change in moral





TABLE 29

Analysis of Variance: Pretest Moral Judgment Scores  
for High and Low IQ Groups

| Source       | df | MS      | F     |
|--------------|----|---------|-------|
| Group Effect | 1  | 3505.00 | 4.56* |
| Error        | 54 | 768.96  |       |

\*  $p = .03$

TABLE 30

Analysis of Covariance: Adjusted Direct Posttest  
Moral Judgment Scores for High and Low IQ Groups

| Source              | df | MS       | F     |
|---------------------|----|----------|-------|
| Group Effect        | 1  | 2262.07  | 5.04* |
| Covariate (Pretest) | 1  | 15581.13 | 34.70 |
| Error               | 53 | 449.04   |       |

\*  $p = .03$



TABLE 31

Analysis of Covariance: Adjusted Indirect Posttest  
Moral Judgment Scores for High and Low IQ Groups

| Source              | df | MS      | F     |
|---------------------|----|---------|-------|
| Group Effect        | 1  | 2457.54 | 4.07* |
| Covariate (Pretest) | 1  | 4614.44 | 7.65  |
| Error               | 53 | 603.54  |       |

\*  $p = .05$

TABLE 32

Analysis of Covariance: Adjusted Total Posttest  
Moral Judgment Scores for High and Low IQ Groups

| Source              | df | MS      | F     |
|---------------------|----|---------|-------|
| Group Effect        | 1  | 2225.84 | 5.84* |
| Covariate (Pretest) | 1  | 9994.91 | 26.22 |
| Error               | 53 | 381.13  |       |

\*  $p = .02$



TABLE 33

Analysis of Covariance: Pretest Moral Judgment Scores  
for Three Class Groups Adjusted for IQ

| Scores         | df | MS      | F     |
|----------------|----|---------|-------|
| Group Effect   | 2  | 1051.81 | 1.35* |
| Covariate (IQ) | 1  | 1911.44 | 2.46  |
| Error          | 52 | 777.83  |       |

\* p = NS



TABLE 34

Analysis of Covariance: Direct Posttest Moral Judgment  
Scores for Three Class Groups Adjusted for Pretest and IQ

| Source                | df | MS       | F      |
|-----------------------|----|----------|--------|
| Group Effect          | 2  | 1175.63  | 2.74*  |
| Covariate 1 (IQ)      | 1  | 1226.92  | 2.86** |
| Covariate 2 (Pretest) | 1  | 16298.30 | 38.04  |
| Error                 | 51 | 428.47   |        |

\*  $p = .07$   
 \*\*  $p = .096$

TABLE 35

Probability Matrix for Scheffé Multiple Comparison of Means:  
 Direct Posttest Moral Judgment Scores  
 for Three Class Groups Adjusted for Pretest and IQ

|         | Class A | Class B | Class C |
|---------|---------|---------|---------|
| Class A | 1.000   | .147    | .885    |
| Class B |         | 1.000   | .059    |
| Class C |         |         | 1.000   |





TABLE 36

Analysis of Covariance: Indirect Posttest Moral Judgment Scores for Three Class Groups Adjusted for Pretest and IQ

| Source                | df | MS      | F      |
|-----------------------|----|---------|--------|
| Group Effect          | 2  | 167.85  | .28*   |
| Covariate 1 (IQ)      | 1  | 3328.02 | 5.56** |
| Covariate 2 (Pretest) | 1  | 4880.96 | 8.15   |
| Error                 | 51 | 598.8   |        |

\* p = NS  
 \*\* p = .02

TABLE 37

Analysis of Covariance: Total Posttest Moral Judgment Scores for Three Class Groups Adjusted for Pretest and IQ

| Source                | df | MS       | F      |
|-----------------------|----|----------|--------|
| Group Effects         | 2  | 632.41   | 1.72*  |
| Covariate 1 (IQ)      | 1  | 1824.89  | 4.97** |
| Covariate 2 (Pretest) | 1  | 10521.28 | 28.64  |
| Error                 | 51 | 367.41   |        |

\* p = NS  
 \*\* p = .03



reasoning from sex differences was thus only partially upheld, with sex differences found to be nonsignificant on the pretest and direct posttest as expected, but with girls scoring significantly higher than boys on the new items of the posttest. Hypothesis 3 regarding a positive relationship between both initial level and developmental change in moral reasoning and IQ was upheld in all instances, with pupils having higher IQ scoring significantly higher on the pretest and showing significantly more change on the three sets of posttest scores adjusted for the pretest.

These findings in the analysis of Hypothesis 3 are, by extension, relevant to Hypothesis 1. While it is not possible from the data to identify the class differences responsible for the differences on the direct posttest scores, the differences are not entirely attributable to IQ effects. Such a finding, then, does not preclude the support for Hypothesis 1, which attributes class differences in part to teacher differences. Nor does it preclude an interaction of IQ effects and teacher differences in producing class differences. On the other hand, the differences between the class groups on the indirect and total posttests were not significant, while IQ effects were significant on both. Hence the evidence for teacher differences is confounded by pupil IQ differences.

A summary of conclusions drawn from the testing of the hypotheses in the study is given in Table 38.



TABLE 38

## SUMMARY OF CONCLUSIONS

| <u>Hypothesis</u>  | <u>Conclusion</u>  |
|--|--|
| 1. There is a significant relationship between teachers' scores on the Opening-Closing Behaviours Scale and developmental change in pupils' moral reasoning. | Upheld on the direct posttest;<br>not upheld on the indirect posttest;<br>marginally upheld on the total posttest. |
| 2. There is a positive relationship between:   |  |
| a) frequency of class participation and initial level of moral reasoning;  | Upheld.  |
| b) frequency of class participation and developmental change in moral reasoning;   | Not upheld.  |
| c) cognitive level of class participation and developmental change in moral reasoning.   | Not upheld.  |
| 3. Initial level and developmental change in moral reasoning are:  |  |
| a) independent of sex differences;   | Upheld on the pretest and direct posttest;<br>not upheld on the indirect and total posttests.                      |
| b) positively related to IQ.   | Upheld in all instances.   |





### Analysis of issue usage

Because of trends noted during the scoring of pupils' responses to the items on the Moral Judgment Scale, issue usage in responding to the items was analyzed descriptively. Results of this post hoc analysis are given in Tables 39 to 44 and in Figures 5 to 10.

When the total sample of subjects was grouped according to five ranges of pretest Moral Judgment scores, mean percent issue usage was shown to change with range of moral reasoning (see Table 39 and Figure 5). Subjects in the lowest range of moral judgment defined almost half of the pretest items in terms of Punishment, while subjects in the highest range defined the same percentage of these same items in terms of Affiliation Roles. Use of the Punishment issue declined with increase in Moral Judgment score and the inverse was true for the Affiliation Roles issue (see Figure 5). The Property issue was salient across the entire set of ranges, but considerably less so for the lowest-range subjects while reaching its highest level of usage as Stage 2 reasoning was achieved and consolidated. The issues of Contract-Trust and Life were used less frequently by all pupils, and items were rarely defined in terms of the Law issue on the pretest.

These trends were roughly paralleled on the direct posttest (see Table 40 and Figure 6). Although there was a general shift upward in moral reasoning among the subjects



TABLE 39  
Mean Percent Issue Usage for Five Ranges of  
Pretest Moral Judgment Scores

| Issue                | Expected<br>Usage* | Range            |                  |                  |                  |                  |
|----------------------|--------------------|------------------|------------------|------------------|------------------|------------------|
|                      |                    | 1<br>116-<br>140 | 2<br>141-<br>165 | 3<br>166-<br>190 | 4<br>191-<br>215 | 5<br>216-<br>255 |
| Punishment           | 10.0               | 48.2             | 28.6             | 20.7             | 11.8             | 4.1              |
| Property             | 15.0               | 12.0             | 19.9             | 24.7             | 24.1             | 20.5             |
| Affiliation<br>Roles | 50.0               | 11.7             | 22.6             | 31.3             | 36.4             | 49.7             |
| Life                 | 15.0               | 7.7              | 10.1             | 9.3              | 11.6             | 13.0             |
| Contract-<br>Trust   | 10.0               | 13.5             | 13.0             | 10.9             | 12.5             | 10.1             |
| Law                  | 00.0               | 6.2              | 5.3              | 2.7              | 3.1              | 2.5              |
| N :                  |                    | 4                | 22               | 22               | 13               | 8                |

\* Raters' assessment of appropriate issue for each item on the Kohlberg Moral Judgment Scale.



TABLE 39  
Mean Percent Issue Usage for Five Ranges of  
Pretest Moral Judgment Scores

| Issue                | Expected<br>Usage* | Range            |                  |                  |                  |                  |
|----------------------|--------------------|------------------|------------------|------------------|------------------|------------------|
|                      |                    | 1<br>116-<br>140 | 2<br>141-<br>165 | 3<br>166-<br>190 | 4<br>191-<br>215 | 5<br>216-<br>255 |
| Punishment           | 10.0               | 48.2             | 28.6             | 20.7             | 11.8             | 4.1              |
| Property             | 15.0               | 12.0             | 19.9             | 24.7             | 24.1             | 20.5             |
| Affiliation<br>Roles | 50.0               | 11.7             | 22.6             | 31.3             | 36.4             | 49.7             |
| Life                 | 15.0               | 7.7              | 10.1             | 9.3              | 11.6             | 13.0             |
| Contract-<br>Trust   | 10.0               | 13.5             | 13.0             | 10.9             | 12.5             | 10.1             |
| Law                  | 00.0               | 6.2              | 5.3              | 2.7              | 3.1              | 2.5              |
| N :                  |                    | 4                | 22               | 22               | 13               | 8                |

\* Raters' assessment of appropriate issue for each item on the Kohlberg Moral Judgment Scale.



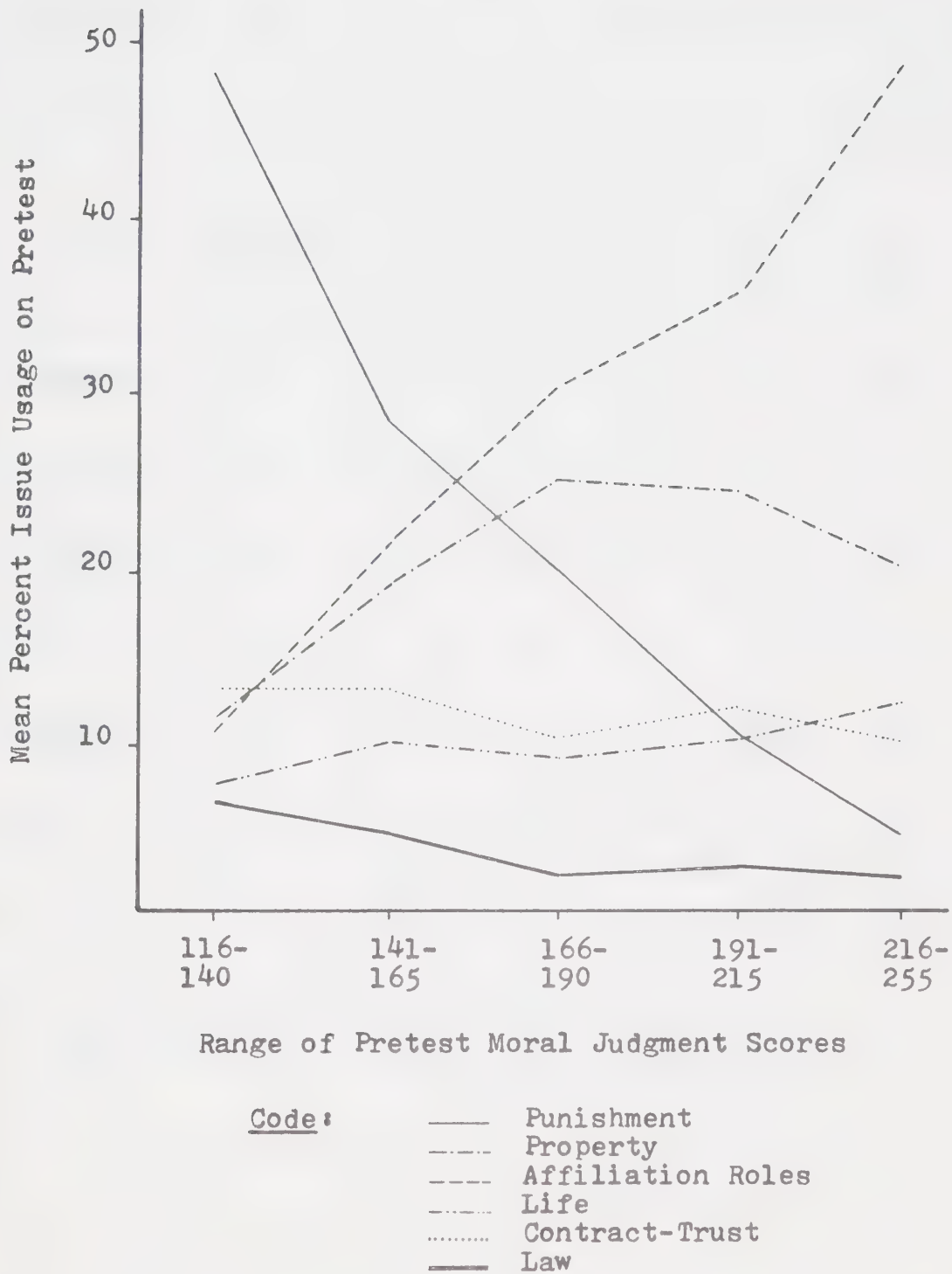


Figure 5. Mean percent Issue Usage across five ranges of pretest Moral Judgment scores.





TABLE 40

Mean Percent Issue Usage for Five Ranges of Direct Posttest  
Moral Judgment Scores

| Issue                | Expected<br>Usage* | Range            |                  |                  |                  |                  |
|----------------------|--------------------|------------------|------------------|------------------|------------------|------------------|
|                      |                    | 1<br>116-<br>140 | 2<br>141-<br>165 | 3<br>166-<br>190 | 4<br>191-<br>215 | 5<br>216-<br>255 |
| Punishment           | 10.0               | 49.3             | 27.1             | 22.8             | 14.0             | 11.1             |
| Property             | 15.0               | 20.6             | 26.4             | 26.1             | 27.7             | 18.4             |
| Affiliation<br>Roles | 50.0               | 13.0             | 19.0             | 27.5             | 37.0             | 40.7             |
| Life                 | 15.0               | 4.3              | 4.5              | 12.6             | 7.8              | 17.1             |
| Contract-<br>Trust   | 10.0               | 8.6              | 9.5              | 9.3              | 9.3              | 9.5              |
| Law                  | 00.0               | 4.3              | 12.3             | 1.2              | 3.1              | 3.1              |
| N:                   |                    | 3                | 9                | 24               | 19               | 14               |

\* Raters' assessment of appropriate issue for each item on the Kohlberg Moral Judgment Scale.



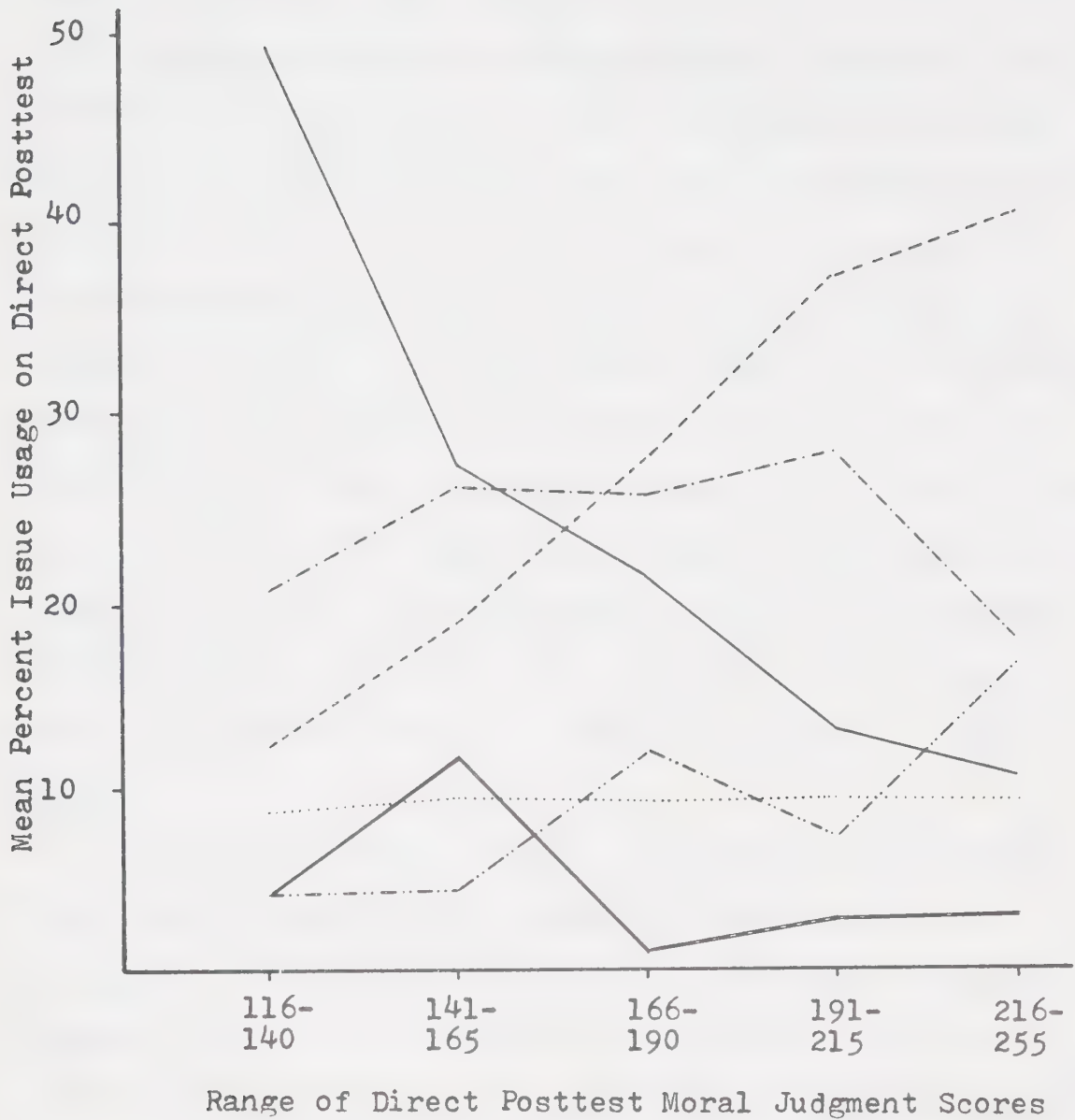


Figure 6. Mean percent Issue Usage across five ranges of direct posttest Moral Judgment scores.



from the pretest to the direct posttest (see Figure 3), issue salience associated with particular ranges of moral reasoning continued to be evident on the direct posttest. This is in keeping with the theory that as individuals move upwards in moral reasoning, they define the same moral problems differently than they did at earlier stages, but characteristically for their present stage. Of additional interest is the observation that while Range 2 showed the greatest shift upwards from the pretest to the direct posttest (see Figure 3), those who remained in this range on the direct posttest showed increased usage of the Law and Property issues (see Figure 6), suggesting that change in level of moral reasoning is preceded by change in issue usage.

Since the total posttest included two new dilemmas involving different issue emphasis, issue usage on the pretest and the total posttest are not strictly comparable. However, despite the change in test content, the trends in issue usage indicated in the pretest and the direct posttest were also shown on the total posttest (see Table 41 and Figure 7). The Punishment issue continued to show an inverse relationship to level of moral reasoning, while the use of the Affiliation Roles issue increased with level of moral reasoning. The Property issue followed the previous pattern of salience across all ranges but with particularly high usage in the range associated with the consolidation





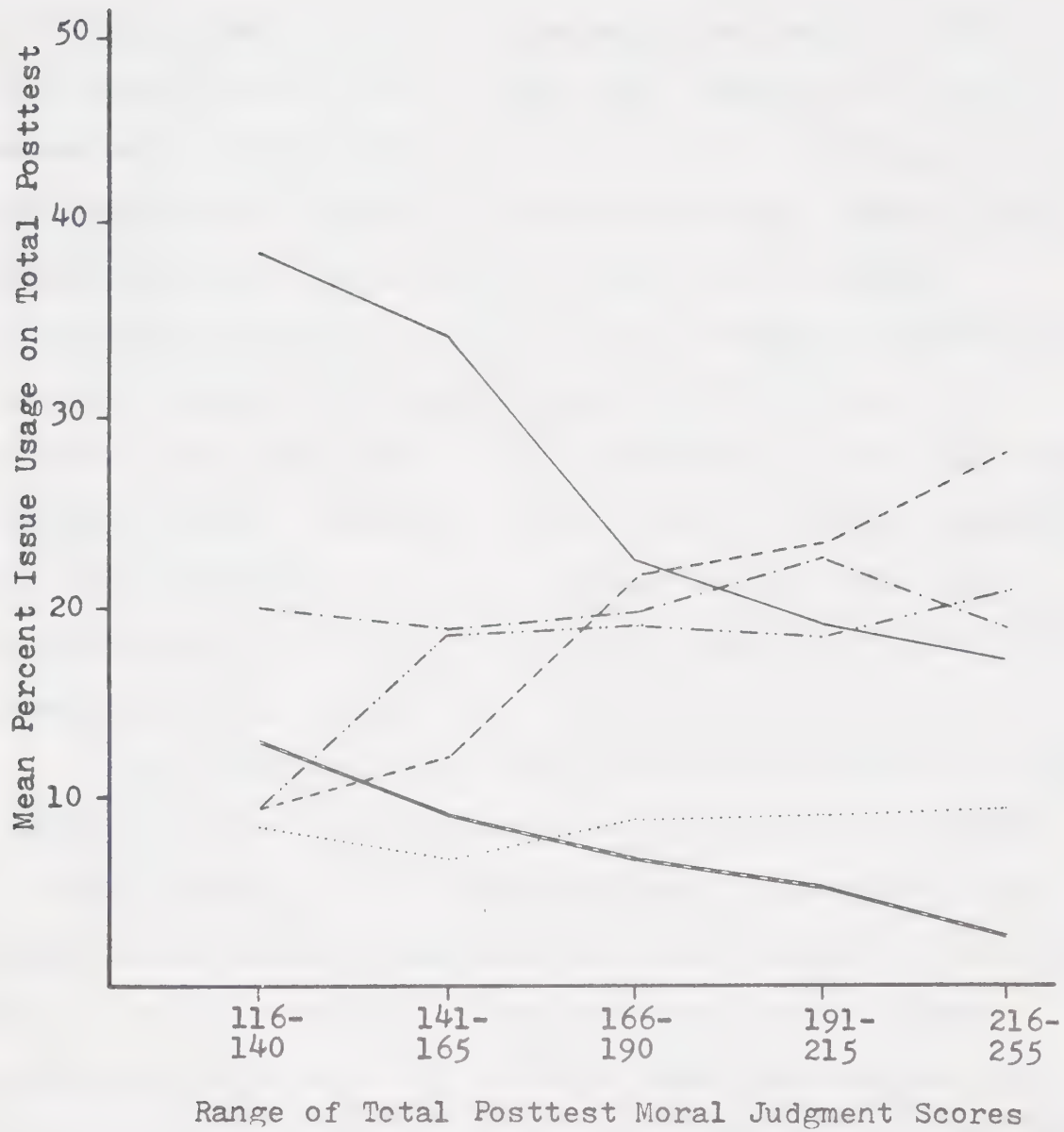
TABLE 41

Mean Percent Issue Usage for Five Ranges  
of Total Posttest Moral Judgment Scores

| Issue                | Expected<br>Usage * | Range            |                  |                  |                  |                  |
|----------------------|---------------------|------------------|------------------|------------------|------------------|------------------|
|                      |                     | 1<br>116-<br>140 | 2<br>141-<br>165 | 3<br>166-<br>190 | 4<br>191-<br>215 | 5<br>216-<br>255 |
| Punishment           | 20.0                | 38.3             | 34.4             | 23.4             | 19.1             | 17.9             |
| Property             | 17.0                | 20.0             | 18.9             | 20.0             | 23.6             | 19.0             |
| Affiliation<br>Roles | 30.0                | 9.7              | 12.5             | 21.8             | 23.9             | 28.5             |
| Life                 | 17.0                | 9.7              | 18.8             | 19.0             | 18.5             | 21.7             |
| Contract-<br>Trust   | 13.0                | 8.3              | 6.4              | 8.8              | 8.9              | 9.3              |
| Law                  | 3.0                 | 13.0             | 9.0              | 6.8              | 5.9              | 3.3              |
| N:                   |                     | 3                | 10               | 22               | 25               | 9                |

\* Raters' assessment of appropriate issue for each item on the Kohlberg Moral Judgment Scale.





Code:

- Punishment
- - - Property
- . - Affiliation Roles
- - - Life
- ..... Contract-Trust
- Law

Figure 7. Mean percent Issue Usage across five ranges of total posttest Moral Judgment scores.



of Stage 2 reasoning. An increase in the usage of the Life issue can be noted on the total posttest, only partly accountable for by change in test content. Contrary to expectations as a result of content changes, usage of the Punishment issue by subjects in Range 1, while still characteristically high on the total posttest, nevertheless showed a decrease from the pretest for this group. This decrease was accompanied by an increased use of the Law and Property issues, similar to that noted for Range 2 subjects in the direct posttest. Such indications are again in keeping with the theory of entering issues associated with upward movement in level of moral reasoning.

The pretest issue usage of subjects in each range of moral reasoning was compared to the scorers' expectations of which issues would be appropriate in responding to the items of the Moral Judgment Scale. For example, on the item "Is it a citizen's duty to report Heinz? Would a good citizen do it? Why?", it was considered appropriate that subjects would reply in terms of the Affiliation Roles issue as understood at their own stage of moral reasoning. It was found that the higher the subject's range of moral reasoning, the more closely issue usage on the pretest approximated the scorers' expectations (see Table 39 and Figure 8). Correlations between pretest issue usage from lowest to highest range of moral reasoning and scorers' expectations were  $-.11$ ,  $.42$ ,  $.77$ ,  $.92$ , and  $.97$ , respectively. On the



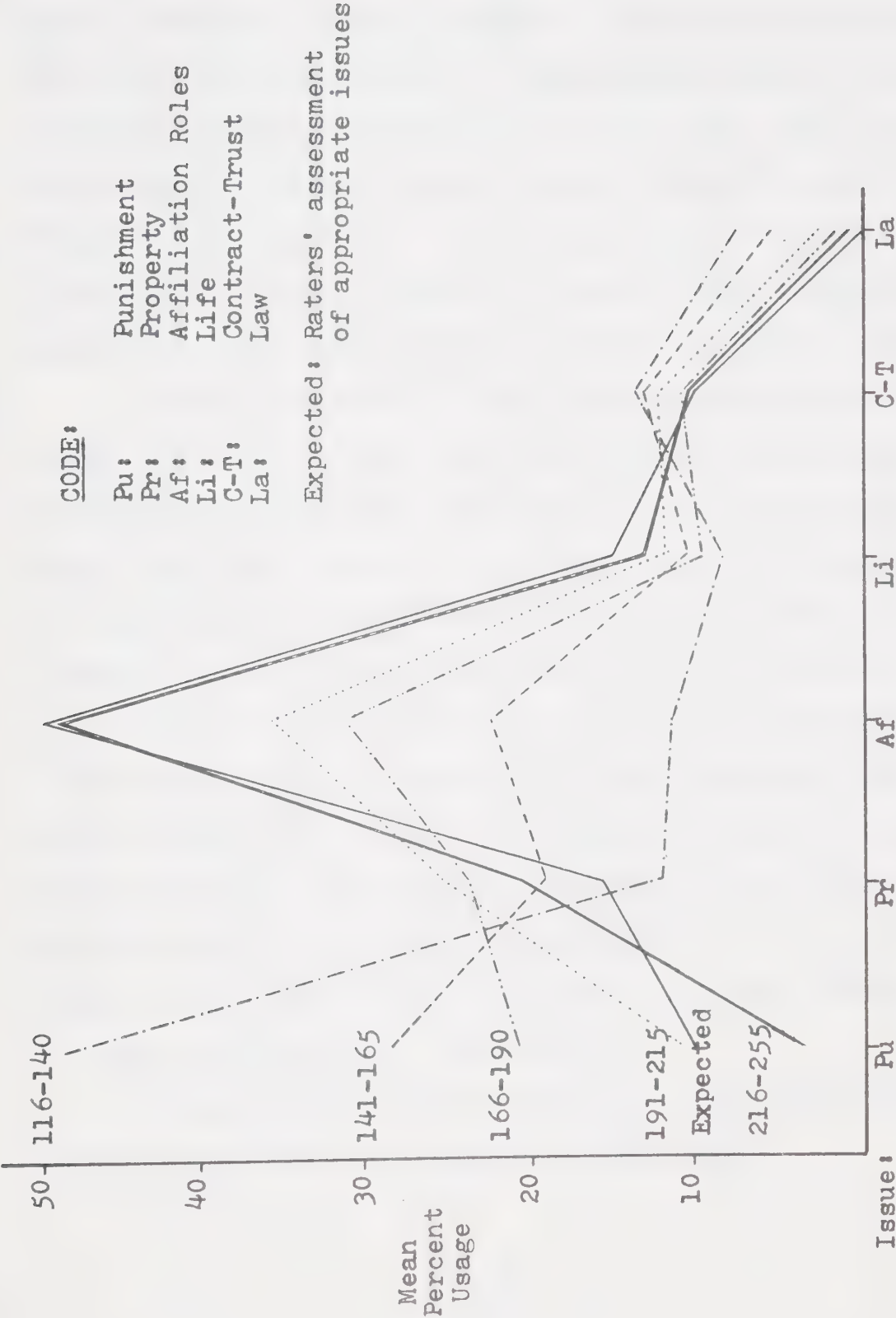


Figure 8. Expected and actual issue usage on pretest.





total posttest, although changes in test content altered the expected distributions of issue usage, similar trends occurred, with correlations of .12, .35, .84, .84, and .94 from lowest to highest range of Moral Judgment scores (see Table 41 and Figure 9). These trends suggest that as the development of moral reasoning proceeds, greater skill is acquired in defining the salient aspects of moral problems.

Visual inspection of the data summarizing issue usage for girls versus boys on the pretest and the total posttest suggested that there were no sex differences in issue usage (see Tables 42 and 43). Similarly, inspection of issue usage by class groups indicated no differences between the three groups (see Tables 44, 45, and 46). Tests of chi square of those issues tending to suggest possible differences, namely, the use of the Law issue for boys versus girls, and of the Affiliation Roles issue for Class C versus the other two classes, indicated no significant differences ( $p = .50$  and  $.80$ , respectively). Consequently, there is no support in the data for either sex differences or class differences in issue usage.

These trends in issue usage are taken into account in discussing the implications of the study.



CODE:

Pu: Punishment  
Pr: Property  
Af: Affiliation Roles  
Li: Life  
C-T: Contract-Trust  
La: Law

Expected: Raters' assessment  
of appropriate issues



Figure 9. Expected and actual issue usage on total posttest.



TABLE 42  
Mean Percent Issue Usage on Pretest  
Moral Judgment Scale for Girls and Boys

| Issue             | Girls | Boys |
|-------------------|-------|------|
| Punishment        | 19.3  | 20.3 |
| Property          | 24.7  | 24.8 |
| Affiliation Roles | 32.3  | 29.8 |
| Life              | 10.0  | 11.6 |
| Contract-Trust    | 10.3  | 8.4  |
| Law               | 2.9   | 4.5  |
| N:                | 35    | 34   |

TABLE 43  
Mean Percent Issue Usage on Total Posttest  
Moral Judgment Scale for Girls and Boys

| Issue             | Girls | Boys |
|-------------------|-------|------|
| Punishment        | 22.7  | 24.1 |
| Property          | 21.1  | 20.9 |
| Affiliation Roles | 22.5  | 20.6 |
| Life              | 18.3  | 19.2 |
| Contract-Trust    | 9.6   | 7.5  |
| Law               | 5.7   | 7.5  |
| N:                | 35    | 34   |





TABLE 44

Mean Percent Issue Usage on Pretest Moral Judgment Scale  
for Three Class Groups

| Issue             | Class A | Class B | Class C |
|-------------------|---------|---------|---------|
| Punishment        | 18.5    | 21.8    | 23.7    |
| Property          | 22.5    | 23.2    | 19.5    |
| Affiliation Roles | 35.1    | 29.5    | 26.5    |
| Life              | 11.6    | 8.9     | 10.8    |
| Contract-Trust    | 9.2     | 13.3    | 13.3    |
| Law               | 2.9     | 3.3     | 5.3     |
| N:                | 23      | 26      | 20      |

TABLE 45

Mean Percent Issue Usage on Direct Posttest  
Moral Judgment Scale for Three Class Groups

| Issue             | Class A | Class B | Class C |
|-------------------|---------|---------|---------|
| Punishment        | 18.4    | 20.4    | 20.5    |
| Property          | 26.6    | 24.8    | 22.7    |
| Affiliation Roles | 32.6    | 30.4    | 30.2    |
| Life              | 9.5     | 11.1    | 11.9    |
| Contract-Trust    | 7.2     | 10.6    | 10.3    |
| Law               | 4.3     | 2.8     | 4.0     |
| N:                | 23      | 26      | 20      |



TABLE 46

Mean Percent Issue Usage on Total Posttest  
Moral Judgment Scale for Three Class Groups

| Issue             | Class A | Class B | Class C |
|-------------------|---------|---------|---------|
| Punishment        | 21.8    | 22.9    | 25.8    |
| Property          | 22.0    | 22.0    | 18.5    |
| Affiliation Roles | 23.2    | 21.9    | 19.2    |
| Life              | 18.8    | 17.3    | 20.5    |
| Contract-Trust    | 6.3     | 9.8     | 9.4     |
| Law               | 7.3     | 5.9     | 6.6     |
| N:                | 23      | 26      | 20      |



## CHAPTER V

### Discussion

#### Effect of teaching style

In testing Hypothesis 1, the analysis of the direct posttest provided support for a relationship between teaching style and the development of pupils' moral reasoning over the school year (see Table 5 and Figure 4). Most developmental change was shown by the pupils of Teacher B, whose style was a mixture of opening and closing behaviours. Even though Teacher A's style was characterized by opening behaviours and Teacher C's by closing behaviours, pupils of Teachers A and C showed approximately the same amount of change. The independent variable under study was teaching style as exercised throughout the school year, and as exemplified in the observed class periods. Content analysis of the two recorded class discussions provided evidence of a characteristic sequence and emphasis in each teacher's style of questioning (see Appendix D). Teacher B's questioning style involved a sequence of cognitive memory and convergent thinking questions associated with defining the problem, followed by divergent thinking questions eliciting possible consequences and possible alternative solutions to the problem. These alternatives were then weighed using evaluative questions such as "Which is better?" and "What should they do?" Throughout these evaluations, convergent thinking processes were elicited by questions requiring verification



and substantiation of the positions taken. Although all types of questions were used at each phase of the discussion, nevertheless one type played a dominant role at each phase. Many instances of moral reasoning were produced by the pupils during the discussion in Teacher B's class. In contrast to Teacher B's questioning style, Teacher A emphasized pupil opinion by eliciting divergent thinking with little demand for evaluation and substantiation. Evaluation in this class dealt with personal preferences, rather than measurement against some external standard of excellence. It is significant to note that there was no evidence of moral reasoning by any pupil during the first discussion in Teacher A's classroom. Teacher C also used a characteristic sequence, initiating each discussion with a series of cognitive memory questions eliciting a detailed reconstruction of the facts associated with the dilemma presented in the film-strip. The problem was then directed towards a specific solution through the use of convergent thinking questions. Divergent questioning was used to elicit possibilities regarding the consequences of the main actor's decision, but not to elicit possible alternative solutions. As a result, the evaluative thinking elicited by Teacher C was directed towards a single solution rather than an appraisal of several alternative solutions. Since Teacher C introduced a certain amount of cognitive and affective conflict into the discussion through the elicitation of pupils'





moral knowledge, consequently there were some instances of moral reasoning by the pupils during the discussions.

It is suggested that the three teaching styles stimulate different degrees of cognitive conflict within pupils, thus accounting for their differential effects on the development of moral reasoning. Teacher B's use of a carefully organized and varied sequence of opening and closing behaviours provided numerous opportunities for cognitive and affective conflict, for focusing on the pertinent factors in the moral dilemma, for sharing and comparing perspectives and hence for role taking, for determining consequences, for recognizing and evaluating the claims of the different actors in the dilemma, and for proposing and evaluating alternative solutions. In contrast, Teacher A's concentration on divergent opinions with little substantiation, evaluation, and counterjudgment failed to provide such opportunities for role taking, for focusing attention on the rights and expectations of others, for challenging and consolidating points of view, and for evaluating outcomes. Teacher C's emphasis upon factual reconstruction and the determination of a specific solution restricted the pupils' focus to certain aspects of the problem selected by the teacher, and did not allow pupils to suggest alternative solutions. Consequently the almost exclusive use of closing behaviours by Teacher C failed to provide the pupils with opportunities for focusing on all the relevant aspects of



the problem, for developing empathy for each of the actors involved in the dilemma and hence for affective role taking, and for exploring and evaluating alternatives. Teacher C therefore failed to arouse the cognitive and affective conflict essential to developmental change.

The curvilinear relationship between the teacher's position on the opening-closing behaviours continuum and developmental change in the pupils suggests that being "locked into" a position of openness or closedness, while manifested in opposite types of questioning styles, has the same effect upon the class. In either case pupils appear to match the teacher's expectations rather than to experience genuine cognitive and affective conflict leading to development in moral reasoning. Such an interpretation was confirmed by the data. While the differences on mean pretest moral judgment scores between Classes A and C were approaching significance on the Scheffé test ( $p = .17$ ; see Table 4), pupils in these two classes were highly similar by the time of the posttest, as evidenced by the Scheffé comparisons of means for adjusted posttest scores ( $p = .97, 1.000, \text{ and } .98$ ; see Tables 5, 7, and 9, respectively). The analysis of teacher questioning style and the evidence of varying developmental change in pupils exposed to different teacher styles thus provides support for the parallel between style of classroom interaction and the stimulation of disequilibrium as proposed in the study.



Although Class B showed a significant change on the direct posttest compared to Classes A and C, no difference between classes was shown on the indirect and total posttests (see Tables 7 and 9). In fact, a substantial number of pupils showed a drop in scores from the pretest to the new items of the indirect posttest. The change shown on the repeated dilemmas, therefore, was apparently not generalized to the new dilemmas. Since one of the new dilemmas was placed between repeated dilemmas, and since the posttest was administered in two phases with one of the new dilemmas being administered in each phase, the drop in scores cannot be attributed solely to fatigue. Some partial explanation for this lack of generalization may be derived from a consideration of the content and the issues involved in the various dilemmas. The literature reviewed in Chapter II indicated a lack of internal consistency in the instrument used in the study, with the content of the dilemmas partly determining the level of the response (Kohlberg, 1971b; Kuhn, 1976; Rest, 1976; Lieberman, 1971). Moreover, a greater number of unscorable responses was found among the individual probes on the two dilemmas of the indirect posttest than on the other three dilemmas of the pretest and the direct posttest, suggesting greater difficulty in responding to the items. This difficulty was associated in particular with items probing the issues of Life and Contract-Trust on the new dilemmas. There were also





indications that the pupils had more difficulty integrating the issue of Punishment with Life or Contract-Trust, as required on the indirect posttest, than they had integrating Punishment with Property or Affiliation Roles as required on the pretest and direct posttest. A question therefore arises as to the appropriateness of these dilemmas for children at the age level of the study sample. The results also suggest that teaching style as observed and quantified in the study, considered separately from the content issues dealt with by the teacher, is only one of the instructional variables to be examined for its effect on the development of moral reasoning.

#### Effect of pupil participation

The testing of Hypothesis 2 showed that pupils who participated more frequently in class discussions had initially higher scores in moral reasoning than pupils with low-frequency participation (see Table 11). There was, however, no systematic relationship between frequency of class participation and measures of developmental change in moral reasoning over the school year (see Tables 13, 14, and 15). These findings suggest a possible long-term rather than a short-term relationship between active class participation and the development of moral reasoning.

Although not analyzed statistically, there was evidence of a more generalized participation in class discussions among the pupils in Class B than in the other



two classes. A comparison of class participation during the two observed class discussions indicated that while 4 pupils in each of Classes A and C contributed 37% and 41% of the total responses, respectively, no pupil in Class B contributed more than 6% of the total pupil responses for that class. This greater spread in participation by pupils in Class B compared to the domination of the discussions by a small number of pupils in the other two classes may also have contributed to the greater change in moral reasoning shown by the pupils in Class B over the school year.

These observations regarding differing patterns of participation among the three groups raise questions concerning the relationship between the measurement of frequency of pupil participation and teaching style. Because high participators tended to be drawn from Classes A and C, rather than from Class B where participation was more generalized, high frequency of participation tended to be associated with the types of intellectual operations predominant in these two classes, namely, expressing divergent opinions as in Class A, and recapitulating factual information or making convergent associations as in Class C. This unforeseen association meant that the expected outcome in regard to Hypothesis 1, viz., that Teacher B would be more effective, was inconsistent with the expected outcome of Hypothesis 2, viz., that more frequent participation was more effective. The question also remains whether Class B



would have shown the same developmental change in moral reasoning compared to the other two classes had Teacher B interacted with only a small number of pupils in the class, using the same mixed opening and closing style of interaction. These observations indicate the need for some other means of measuring frequency of class participation in relation to the development of moral reasoning in the pupils.

The measurement of pupil participation in the study also included a consideration of the quality of verbal response as an indication of quality of cognitive and affective participation. The measure used was a teacher rating of the cognitive level of pupils' day-to-day class participation. No relationships emerged between these ratings and developmental changes in pupil moral reasoning (see Tables 16, 17, and 18). However, a content analysis of the observed class discussions suggested that pupils with higher moral reasoning scores and those showing more developmental change over the school year responded more thoughtfully and showed more awareness of the conflict in the dilemmas being discussed, by attending to a larger number of the relevant factors and by attempting to integrate the claims of the different actors in the dilemmas. As a consequence, such pupil responses were characterized by hesitation, vacillation, inconsistency, and even confusion while the pupils attempted to integrate opposing points of view. The content analysis also showed that Teacher B assisted such pupils to





clarify their thinking by means of well-placed cognitive memory, convergent thinking, and evaluative questions involving recapitulation of relevant information, substantiation, contrasts and comparisons, logical conclusions, and evaluations. In contrast, Teachers A and C both failed to encourage such hesitant searching by the pupils during the discussions, but in different ways. While Teacher C attempted to dispel the ambiguity by directing the discussion towards an immediate solution through one-step convergent questioning, Teacher A sought for more ambiguity by eliciting further divergent opinions, thus ignoring the pupils' attempts to resolve the ambiguity. The content analysis suggested that a measure of cognitive level of pupil participation would have been better based on the specific responses of pupils during the observed class discussions. It also emphasized the importance of teacher style in developing pupil skills associated with moral reasoning.

Despite the nonsignificant results obtained in testing Hypothesis 2, therefore, the content analysis of the recorded class discussions confirmed rather than diminished the original expectation on which the study was based. A different way of operationalizing pupil participation, such as a frequency score weighted for the cognitive level of the response similar to that used on the Teacher Opening-Closing Behaviours Scale, may show relationships between frequency and quality of pupil participation and





the development of moral reasoning.

### Effect of sex and IQ differences

Analysis of the data associated with Hypothesis 3 indicated that there were no differences between boys and girls in the pretest and direct posttest moral reasoning scores (see Tables 19 and 20). However, sex differences were found on the indirect and total posttests, with girls scoring significantly higher than boys on the new dilemmas of the posttest (see Tables 21 and 22). The interpretation of this finding is not clear. The sex differences on the indirect posttest cannot be accounted for by class differences since no class differences were found on the indirect posttest (see Table 7), even with the effect of sex differences removed (see Table 25). Since, however, a significant effect of IQ differences was found on both pretest and posttest scores (see Tables 29, 30, 31, and 32), the confounding of IQ and sex is a possible explanation of sex differences on the indirect posttest scores. Classroom differences on the direct posttest, however, were not accounted for by sex differences (see Table 23), thus leaving intact the finding of the effect of teaching style as established under Hypothesis 1.

A consistent IQ effect upon level of moral reasoning was found throughout the analysis of the data (see Tables 29 through 37), indicating an interrelationship between level of intelligence and both initial level and developmental



change in moral reasoning. This finding is in keeping with the literature indicating a moderate correlation between IQ and moral reasoning (Keasey, 1971; Kohlberg, 1964; Tracy & Cross, 1973). The findings of the present study regarding IQ and developmental change, however, are not consistent with those of Tracy & Cross (1973), who did not find a relationship between IQ and upward change in moral reasoning in their sample. Furthermore, although there were no pretest differences between the three classes both with and without controlling for IQ (see Tables 3 and 33), the differences between the three classes in the direct posttest were found to be marginally attributable both to IQ and to teacher effect, with teacher effect being slightly more significant (see Table 34), suggesting a possible confounding of the two variables. An interaction between teaching style and pupil intelligence is to be expected within a cognitive-developmental framework, and consequently the study did not anticipate finding a "child-proof" teaching style. Followup research moving away from the naturalistic mode and attempting intervention could make possible an analysis of the interaction effect between teaching style and pupil intelligence on the development of moral reasoning.

#### Findings regarding issue usage

The post hoc analysis of the data associated with issue usage provided evidence for the stage-specific



character of certain issues. The Punishment issue was seen to be associated with the lower Stage 1 scores in the sample, while the issues of Property and Affiliation Roles were associated with transition into and consolidation of Stages 2 and 3 moral reasoning, respectively (see Tables 39 to 41, and Figures 5 to 7). Changes in level of moral reasoning appeared to be preceded by change in issue usage, with lowest-scoring subjects on the posttest defining problems less in terms of the Punishment issue and more in terms of the Law and Property issues than they had on the pretest (compare Tables 39 and 41 for Range 1, and Tables 39 and 40 for Range 2). Although continuing to use these issues with qualitatively Stage 1 processes, subjects nevertheless appeared to focus on different issues in defining the problem, thus seemingly preparing the way for qualitatively different ways of resolving the problem. Furthermore, certain issues such as Life and Contract-Trust seemed beyond the competence of this age range and were used only with considerable difficulty, again suggesting an interaction between content and structure in moral reasoning. These findings are in keeping with the theory of entering issues found in the literature (Kohlberg et al., 1975; Rest, 1973, 1974a, 1974b, 1975, 1976; Rest et al., 1974) which emphasizes the interaction between issue and structure in the process of stage transition. Such an interaction indicates the necessity of providing opportunities for





dealing with stage-specific contents in order to promote development.

Development in moral reasoning, then, involves not only resolving moral problems in a structurally different way, but also learning to define problems more accurately. This second aspect of developmental change is further evidenced by the finding that subjects reasoning more maturely showed more skill in focusing upon the relevant issues of a problem (see Figures 8 and 9). The study found that the higher the pupils' scores in moral reasoning, the more closely they approximated scorers' expectations regarding which issues would be focused upon in responding to a particular item on the Moral Judgment Scale. This ability to define the problem less egocentrically involves advancement in role-taking skills, emphasis upon intentionality, and the ability to compare values in some kind of hierarchical manner. Increase in scores by individuals indicates development in these abilities. Consequently the teaching style of Teacher B, with its greater opportunity for sharing and comparing perspectives, for evaluating claims of actors and outcomes of alternative solutions, apparently promoted the ability to define moral problems with increasing accuracy.

#### Theoretical implications

A number of significant implications for cognitive-developmentalism appeared in the study. For instance,



naturalistic factors were found to influence the development of moral reasoning. This finding conforms to and elaborates theoretical expectations, for although stage change is posited as a self-regulated process, it proceeds by way of the interaction of the individual with his environment. Among influential factors, then, are different teaching styles currently in use in the schools, which have different effects on the rate of pupils' development in moral reasoning.

Besides contributing information about factors external to pupils, implications of the study also relate to mediating factors within individuals, and principally to the mediating role of initial level of moral reasoning. The initial level of moral reasoning was shown to be the most significant variable in developmental change throughout the study ( $p \leq .002$ ; see Tables 5 to 9, 13 to 18, etc.). One of the specific effects of initial level of moral reasoning apparent in the study was by way of a ceiling effect. Present stage of moral reasoning limits the amount of change that can be expected to occur in an individual, as evidenced by the greater shift among pupils using lower-range moral reasoning on the pretest compared to those with higher pretest scores (see Figure 3). The confirmed theoretical importance of initial level of moral reasoning has a number of practical consequences. It lends support to the conclusion of Tracy & Cross (1973) that experimental studies of



moral reasoning must take more account of initial level of moral reasoning. It highlights the relevance of the comparative analyses in this study (see Tables 5 to 9 and Appendix C) in which change estimated in raw scores was contrasted with change calculated using statistical methods to control for pretest differences. The importance of initial level of moral judgment demands statistical procedures sensitive enough to control for its effects. It also demands recognition in the design of experimental and practical interventions, since both horizontal decalage and upward change through exposure to higher-stage reasoning are governed by present-stage functioning.

Another significant implication of the study concerns the rate of development of moral reasoning. The distribution of scores and the small amount of change in pupils' moral reasoning over the year (see Figures 2 and 3) confirm the gradualness of the change process and fit in with the evidence that places a limit on the stage of moral reasoning normative at this age level (Kuhn et al., 1972; Moir, 1974; Sullivan, 1975). Research results on this point, however, have been confusing. Even though Kohlberg (1973a) stated that principled moral reasoning, if achieved by an individual at all, was not achieved until after age twenty, in some recent study samples (Blatt & Kohlberg, 1973; Krebs & Kohlberg, 1973; Saltzstein et al., 1972) almost one third of the elementary school subjects were





scored at Stages 4 and 5. It would seem that the use of scoring methods which allow for stage assignment on the basis of verbal usage only, rather than on an analysis of the structure of the individual's moral thought, fails to provide adequate information. The further accumulation of evidence related to the limiting effect of logical and affective development on children's moral reasoning remains important for the clarification of cognitive-developmental theory.

One other implication of the study is also significant for cognitive-developmental theory. The study provided evidence to suggest that a change in substage level of moral reasoning is preceded by a change in issue usage (compare Tables 39 and 41 for Range 1, and Tables 39 and 40 for Range 2). While the finding is preliminary, a longitudinal content analysis of pupils' responses to the moral reasoning dilemmas suggested trends regarding within-stage development over the time period of the study (see Figure 10). For example, pupils reasoning at Stage 1 who had responded to items in terms of Punishment and self-concern on the pretest, frequently redefined the same items in terms of a heteronomous, Stage 1, Affiliation Roles response on the posttest at the end of the school year. Pupils, however, who had used such an authoritarian Affiliation Roles reference on the pretest, tended to redefine the question in terms of a heteronomous, Stage 1, Law response on the





WITHIN STAGE 1 (external forces)

PUNISHMENT → AFFILIATION ROLES → LAW  
defined heteronomously a terminal reason  
in terms of authority  
e.g. "He's the boss" e.g. "It's against the law"

Note: increased differentiation (from physical towards the psychological)  
decentering & externalizing (distancing from self)  
generalizing & abstracting (less concrete, less specific)

WITHIN STAGE 2 (acts)

PROPERTY → PROPERTY & AFFILIATION ROLES → AFFILIATION ROLES & PROPERTY  
emphasis on self; exchange for what I want manipulating others for  
increased initiative; and need; what I want & need;  
internal reference; e.g. "You do this & I'll aware of others reactions  
e.g. "I want & need" do that" as means to obtain own end;  
aware of others, but in own terms; projection of e.g. "If I tell the truth,  
own reactions, likes, dislikes to others; then maybe he'll let me go"  
e.g. "If I like this, then  
maybe he does too"

WITHIN STAGE 3 (persons)

AFFILIATION ROLES → AFFILIATION ROLES  
defined allocentrically; what others expect & want;  
what I do affects others; aware of our own and others'  
their wishes & feelings; reactions as mutually infor-  
e.g. "If I do this, then mative; e.g. "He'd like it if  
he'll be disappointed" I did that because he likes..."

Figure 10. Within-stage development: suggested trends from protocols.



posttest. These trends suggest the possibility that an individual, while still reasoning with Stage 1 structures, defines the problem in an increasingly decentered and differentiated way, by externalizing the problem beyond himself and his own anxieties about concrete physical consequences, to persons or forces outside himself. The problem thus becomes more generalized and abstract, and consequently more controllable. Such a refocusing of the problem corresponds to the cognitive-developmental description of transition from Stage 1 to Stage 2 reasoning as a process of increased differentiation between physical and psychological realities, and increased self-direction and control over one's environment. Parallel trends were also noted among pupils reasoning at Stages 2 and 3, as indicated in Figure 10. This shift in the way individuals focus on the problem, as observed in the moral reasoning protocols of the study sample, provides data for a possible model of the process by which structures are generalized from the entering issue of a particular stage to other content domains through the process of horizontal décalage. Such a model, if verified by further research, would provide both the opportunity for tracking within-stage development and at the same time provide the basis for the design of strategies to promote the lateral extension of a structure, thereby promoting stabilization and consolidation of a mode of reasoning and preventing the fixation of particular issues



or contents at lower stages of reasoning. This as well as several of the preceding points have not only theoretical implications, but are also relevant to educational practice.

### Educational implications

The findings of the study emphasize the importance of the naturalistic factors of teaching style and pupil involvement in promoting the development of moral reasoning in elementary-school-age children. In particular, the analysis of teacher opening and closing behaviours calls for professional development programs to enable teachers to acquire a teaching style appropriate for moral education.

In view of the evidence, an appropriate teaching style is one which involves a carefully sequenced combination of opening and closing behaviours in teaching, as a means of developing skills prerequisite for moral reasoning, including the skills of logical and affective decentering and perspective taking, predicting consequences, and evaluation. Such teacher-pupil interaction in discussing moral problems promotes the development of skills specifically related to moral decision making. The appropriate use of cognitive memory and convergent thinking questions is essential for learning the skills required for analyzing moral problems accurately, and in developing sensitivity to the specifically moral aspects involved. Pupil skill in establishing and evaluating alternatives requires that the teacher provide timely opportunities for divergent and





evaluative thinking. Finally, by eliciting evaluations which use moral responsibility as the criterion of judgment the teacher enables pupils to acquire skills associated with prescriptive judgments. The need to assist teachers in acquiring a teaching style appropriately combining opening and closing behaviours is the study's first implication for education.

The results of the study also imply the need to question the prevailing recommendation that intervention in moral education should be by way of modeling +1 reasoning. Teaching styles measured in terms of opening and closing behaviours amount to assessments of the teacher's use of questions. Since questions stimulate cognitive conflict, and cognitive conflict leading to disequilibrium is theoretically required for the development of moral reasoning, the findings in regard to teaching style are not unexpected. On the other hand, modeling, rather than stimulating disequilibrium, tends to provide the "right" answer, thereby leading to passive imitation. Although it has not been verified by research, the possibility exists that the use of models, particularly when accompanied by rewards for imitation, may lead to fixation at a particular stage, rather than to developmental change. Consequently, while it is important to work with stage-specific structures through the wise use of the issues of authority and punishment particularly at Stage 1, of rewards at Stage 2, and of



approval at Stage 3, nevertheless care must be taken to avoid the interaction of modeling with stage to produce imitation out of deference or fear at Stage 1, out of self-interest at Stage 2, or out of need for approval at Stage 3, since such passive imitation would tend to promote fixation rather than developmental change. There is, furthermore, the danger of reinforcing present opinion by the presentation of models (Keasey, 1973). These objections to the +1 modeling paradigm, coupled with the findings of the study, suggest that exposure to higher-stage reasoning is more effectively accomplished through the questioning and problem-solving processes associated with opening and closing behaviours in teaching style, than through the presentation of models.

The study also highlights the need for educational programs which stimulate within-stage development of pupils. Evidence from the study (see Figure 3) as well as other research using elementary-school-age samples (Keasey, 1973; Kohlberg & Kramer, 1969; Kuhn, 1976; Moir, 1974; Sullivan, 1975) support the understanding that movement from one stage to another generally requires a time period of years (Flavell & Wohlwill, 1969; Rest, 1974a). Accordingly, the elementary school teacher should emphasize horizontal development and the prevention of fixation as the immediate goals of moral education, rather than stage change exclusively. Also related to horizontal development is the trend



towards a progressive issue usage within the same stage noted in the study (see Figure 10). Although it requires further research, its verification would provide an additional basis for the design of classroom strategies to promote horizontal *décalage*.

Even though educational interventions at this age level are more appropriately directed towards horizontal *décalage* rather than stage change, the overall planning of the strategic use of opening and closing behaviours by the teacher must also be made within the framework of stage-related skills associated with transition into the next stage. Since the emphasis in movement from Stage 1 to Stage 2 is upon the restructuring of relationships with authority, the teacher must provide the pupils at this stage with an appropriate combination of convergent, divergent, and evaluative questions which promote decentering, the exploration of relationships between actions and consequences, and the movement of locus of control from external factors to the self. The selective and wise use of the issue of punishment by the teacher is of importance in promoting the development of such skills at this stage, and in preventing fixation at Stage 1 structures. Movement from Stage 2 to Stage 3 involves the development of skills associated with reciprocal role taking. Consequently, the teacher's questioning must provide the pupils with opportunities for examining consequences from the viewpoint of





others, for attending to the feelings of others, and for becoming aware of the intentions of others. Rewarding consideration of others is also an important element in promoting the acquisition of these skills by the pupils at this stage of development.

The study's final implication for educational practice arose out of the content analysis of the recorded discussions. The analysis indicated the importance of pupils' moral knowledge and moral feelings in the moral reasoning process. For example, the pupils in Classroom C were confronted with the statement by one pupil that "It's better not to lie." Several children supported this point of view, and the discussion revolved around their need to integrate this statement of moral knowledge and its accompanying feelings into their reasoning about the moral dilemma being discussed. The statement acted as a catalyst in promoting more reflection upon consequences, responsibilities, and alternatives, and consequently lead to more adequate reasoning about the problem. Similarly, the expression of moral affects by pupils, such as "I'd feel bad if people didn't trust me", had the effect of leading the pupils to integrate their own feelings about right and wrong in solving the dilemma. The teacher's role in promoting such integration of moral knowledge and moral feelings, and in developing these domains as intrinsic to the moral reasoning process was also exemplified in the discussions.





For example, early in the first class discussion, Teacher C dealt with the question of telling the truth by saying, "Sometimes you sort of have to struggle with your own conscience: 'Should I tell, or should I not?' And if it's the truth, you should actually try and tell, shouldn't you?" In contrast, at the same juncture in the discussion Teacher B raised the question, "Will he be lying if he doesn't tell?", thus leading the pupils to a refinement in their understanding of the nature of truthfulness and lying, and consequently in the feelings associated with the decision they were asked to make. The teacher's role in clarifying and integrating the pupils' moral knowledge and moral feelings is thus seen as an important aspect of the overall process of moral education.

In summary, then, the study indicated the value of a teaching style which makes skillful use of opening and closing behaviours to bring about cognitive conflict within the pupils in order to stimulate both the extension and the restructuring of mental skills for moral problem solving, thereby promoting a better definition of moral problems and a better understanding of moral knowledge. Such a teaching style is valuable because it stimulates within-stage development and prepares the way for upward stage change. Further verification of the usefulness of the proposed mixed opening-closing teaching style would result from the further research suggested by the study.



### Implications for further research

Several implications for further research are provided by the study. Firstly, experimental studies designed on the basis of findings from the present study are needed to test further the effects on the moral reasoning of children of different combinations of opening and closing behaviours in moral education programs.

Secondly, a further analysis of the relationship between pupil participation and the development of moral reasoning is required. The study suggests the use of frequency scores weighted for the cognitive level of the response, similar to the weighting of scores on the Teachers' Opening-Closing Behaviours Scale. Such an operationalization of pupil participation would offset the confounding of pupil participation and teacher style noted in the present study, and would provide useful information regarding the importance of active involvement in the moral discussions recommended in the cognitive-developmental approach to moral development.

An analysis of the relationship between IQ and issue usage would also be useful in order to determine the extent to which the differences in issue usage noted in the present study and in other moral development research are a function of differences in intelligence among subjects. While the interaction between intelligence and moral reasoning in general has been analyzed in the literature, a more



thorough analysis of the effect of level of intelligence on issue usage is needed if the theory of issue usage is to be better understood.

Of particular importance is the need for further research into the process of within-stage development suggested in the study. Since the process of stage change has been shown to be a lengthy one, the need for a better understanding of the processes of lateral extension of structures is essential to more adequate educational interventions. Research is needed, therefore, to test whether stage-specific patterns of horizontal décalage can be detected, such as that suggested by the observations from the present study as summarized in Figure 10. Consequent upon such research would be the development of instrumentation similar to Rest's Defining Issues Test (Rest et al., 1974), suitable for elementary-school-age subjects, and adequate for a rapid assessment not only of general range of moral reasoning, but also for detecting those areas of within-stage development in which developmental lag may have occurred.

Finally, since moral education is to a large extent a matter of developing the skills associated with moral decision making, the study implies the need to design and test strategies for the development of such skills. These include both skills prerequisite for moral reasoning and those specifically involved in moral problem solving, such





as logical and affective perspective taking and the development of an increasingly adequate reference group in making moral judgments, skill in defining problems, predicting consequences, searching for alternative solutions, focusing on relevant information, discerning the moral aspects of the problem, making evaluations, and so on. The study indicated the importance of teaching style as one way of promoting these skills. The effectiveness of moral education programs requires the identification and testing of a variety of such strategies.

### Conclusion

The present study, completed as it was in a school setting, provides some preliminary insights into aspects of day-to-day teacher-pupil interaction which promote the development of moral reasoning in children at the elementary school level. The gradualness of the developmental process in the moral domain is apparent. Accordingly, within-stage development through the generalization of existing moral structures across new content areas is advocated as the immediate goal of moral education at this age level, rather than stage change exclusively. For this purpose a teaching style combining opening and closing behaviours is recommended to promote the cognitive conflict, the logical and affective skills, and the generalized class participation in discussions involving stage-appropriate content essential to the development of moral reasoning. The dynamic role of



issue usage in moral problem solving highlights the need for greater attention to the interaction of content and stage, and to the process by which stage structures are extended to new content areas. It is important at this point in the evolution of cognitive-developmental theory of moral reasoning to further elaborate these processes of within-stage development and their application to educational practice.



## APPENDIX A

## Intellectual Operations

Cognitive Memory Operations: the simple reproduction of facts, formulas, or other items of remembered content through such processes as recognition, rote memory, and selective recall.

promoted by teacher cues requiring:

- . fact stating
- . quoting
- . recitation
- . repetition or rephrasing
- . recapitulating
- . clarifying by adding informative details

Convergent Thinking: the process whereby the student takes a number of facts or associations, and puts them together in certain predictable combinations to come up with one right possible answer.

promoted by teacher cues requiring:

- . convergent association (likes and differences, comparisons, etc.)
- . synthesis
- . generalization
- . logical conclusion
- . summary reformulation
- . causal relationship
- . explanation
- . substantiation
- . translation
- . consensus



## APPENDIX A (continued)

Evaluative Thinking: the process whereby the student judges actions, opinions, solutions, or persons according to some value continuum.

promoted by teacher cues stimulating:

- value judgment
- construction of personal value dimension (standard / criterion) by the pupil (e.g. what he considers heroic)
- rating in terms of a scale of values
- assessment of probability
- modification of a prior value judgment
- stating a counter judgment
- making a choice between alternatives
- establishing a more precise value dimension

Divergent Thinking: the search for a variety of unpredictable alternatives (ideas, opinions, solutions, associations, interpretations) from given information.

promoted by teacher cues stimulating:

- divergent association (comparison, analogy etc.)
- implication
- projection to new possibilities
- further answers to pupil responses for a new perspective
- extrapolation beyond the given
- independent generation of new ideas

(Adapted from Gallagher, 1964; Gallagher et al., 1967)





## APPENDIX B

## Class Participation Rating

Instructions:

Please rate each pupil on cognitive level of class participation from 1 to 3 using the following guidelines.

1. Pupil gives simple factual responses to questions.
2. Pupil brings together a number of facts and ideas in responding; able to generalize.
3. Pupil gives original, creative responses; suggests alternative solutions or viewpoints.

Thank you for completing participation ratings for your class - and for your assistance and cooperation throughout the study.

Frances MacDonald

| PUPIL | COGNITIVE LEVEL OF<br>CLASS PARTICIPATION |
|-------|---|
|       |   |



## APPENDIX C

Analysis of Variance: Raw Direct Change Scores  
on Moral Judgment Scale for Three Class Groups

| Source       | df | MS      | F     |
|--------------|----|---------|-------|
| Group Effect | 2  | 1489.37 | 2.94* |
| Error        | 66 | 506.85  |       |

\*  $p = .059$

Analysis of Variance: Raw Indirect Change Scores  
on Moral Judgment Scale for Three Class Groups

| Source       | df | MS     | F     |
|--------------|----|--------|-------|
| Group Effect | 2  | 959.56 | 1.03* |
| Error        | 66 | 929.13 |       |

\*  $p = .36$

Analysis of Variance: Raw Total Change Scores  
on Moral Judgment Scale for Three Class Groups

| Source       | df | MS      | F     |
|--------------|----|---------|-------|
| Group Effect | 2  | 1145.06 | 2.02* |
| Error        | 66 | 567.13  |       |

\*  $p = .14$



## APPENDIX C (continued)

Analysis of Variance: Raw Direct Change Scores on Moral Judgment Scale for Three Classes after Random Equalization 1

| Source       | df | MS      | F     |
|--------------|----|---------|-------|
| Group Effect | 2  | 2317.06 | 5.44* |
| Error        | 57 | 426.28  |       |

\*  $p = .006$

Analysis of Variance: Raw Indirect Change Scores on Moral Judgment Scale for Three Classes after Random Equalization 1

| Source       | df | MS      | F     |
|--------------|----|---------|-------|
| Group Effect | 2  | 1825.85 | 2.15* |
| Error        | 57 | 849.03  |       |

\*  $p = .12$

Analysis of Variance: Raw Total Change Scores on Moral Judgment Scale for Three Classes after Random Equalization 1

| Source       | df | MS      | F     |
|--------------|----|---------|-------|
| Group Effect | 2  | 1945.11 | 3.91* |
| Error        | 57 | 497.91  |       |

\*  $p = .025$





## APPENDIX C (continued)

Analysis of Variance: Raw Direct Change Scores on Moral Judgment Scale for Three Classes after Random Equalization 2

| Source       | df | MS      | F     |
|--------------|----|---------|-------|
| Group Effect | 2  | 3227.46 | 6.96* |
| Error        | 57 | 463.56  |       |

\*  $p = .001$

Analysis of Variance: Raw Indirect Change Scores on Moral Judgment Scale for Three Classes after Random Equalization 2

| Source       | df | MS      | F     |
|--------------|----|---------|-------|
| Group Effect | 2  | 2252.71 | 2.60* |
| Error        | 57 | 867.54  |       |

\*  $p = .08$

Analysis of Variance: Raw Total Change Scores on Moral Judgment Scale for Three Classes after Random Equalization 2

| Source       | df | MS      | F     |
|--------------|----|---------|-------|
| Group Effect | 2  | 2859.62 | 5.64* |
| Error        | 57 | 507.45  |       |

\*  $p = .005$



## APPENDIX D

Classification of Excerpts from Discussion I for  
Teachers A, B, and C, using the Teacher Opening-  
Closing Behaviours Scale<sup>1</sup>

Code: CM Cognitive Memory Cue  
CT Convergent Thinking Cue  
ET Evaluative Thinking Cue  
DT Divergent Thinking Cue

| <u>Teacher A</u> | <u>Cue</u>  | <u>Class.</u> |
|------------------|---|---------------|
| Teacher:         | Boys and girls, you've just seen the filmstrip, now eh? So <u>what was the title?</u> Joe? <sup>2</sup> ...Michael, do you know the title?  | CM            |
| Michael:         | The Trouble with Truth.   |               |
| Teacher:         | Something about truth, eh? Okay, it's a problem with truth, eh? <u>Whose boat was it, Tony?</u>   | CM            |
| Tony:            | Captain ....  |               |
| Teacher:         | Okay, the Captain owned it, eh? So <u>what rules did the Captain make about his boat?</u> Yeah, Ken?  | CM            |
| Ken:             | For no one to go on it.   |               |
| Teacher:         | Okay, for nobody to go on it, then, eh? Okay, <u>do you think that this Captain had a right to make a rule about his boat?</u>  | ET            |
| Pupil:           | Yeah, because if they went on, and if they slipped, they'd fall.  |               |
| Teacher:         | Okay, well you're answering two things there: He had a right then. It was his boat, so he had a right to say. Is that what you're saying for one thing? And then, why does he have a right? (pause) <u>Why do you think he made the rule?</u> | DT            |
| Pupil:           | Well, because if someone slipped and fell, they wouldn't know what to do.   |               |
| Teacher:         | Right. He doesn't want anybody to get hurt on his boat, eh? Okay, so he owned the boat; he had a right to make a rule;  |               |

<sup>1</sup>See Figure 1 and Appendix A.

<sup>2</sup>Pupils' names altered from original text.



|          | <u>Cue</u>  | <u>Class.</u> |
|----------|---|---------------|
|          | and he made a rule; and he made a rule for a purpose, then, eh? <u>You all see that?</u>  | CT            |
| Class:   | Yes...Yep...(etc.)  |               |
| Teacher: | Okay, now comes in this trust, eh? The title of the story was...The Problem of Trust, okay? So we're talking about trust... <u>Do you think the Captain was a person who trusted people?</u>                  | DT*           |
| Pupil:   | Yes.  |               |
| Teacher: | You say "Yes", eh? <u>Why do you say "Yes"?</u>   | CT            |
| Pupil:   | Well, if he leaves a small kid in charge, then he must trust a lot...   |               |
| Teacher: | Okay. If he left a small kid in charge, you say he has to trust people, eh? Okay. <u>Do you think it was an expensive boat?</u>   | ET            |
| Pupil:   | Mm-hmm.   |               |
| Teacher: | So he was leaving a lot of trust with those kids...with that one person. <u>Do you think he was leaving trust, Donald, with just that little boy he made Captain, or do you think he trusted everybody?</u>   | DT*           |
| Donald:  | He trusted everybody.   |               |
| Teacher: | Why do you think - <u>Why do you say that?</u>  | CT            |
| Donald:  | I don't know.   |               |
| Teacher: | He only made one person Captain. (pause) <u>Gail?</u>   | DT*           |
| Gail:    | Well, if he only trusted one person, then he'd leave that person at the boat and then take the others along with him.   |               |
| Teacher: | Okay. That could be it, eh? But he put one person in charge, eh? I think maybe he trusted everybody, but left one person in charge. <u>Do you think they all had the responsibility of being trustworthy?</u> | CT            |
| Class:   | Yes...  |               |
| Teacher: | How many boys weren't trustworthy? Or boys and girls? <u>Out of the whole group how many did not obey the rule?</u>   | CM            |

\*Item classified by type of pupil response accepted by the teacher. By convention, in ambiguous cases teacher intent is interpreted by acceptance of type of pupil response. Similarly, the acceptance of a further pupil response constitutes an additional teacher cue, with the accepted response determining the classification (Bellack, 1974). Items so classified are indicated by an asterisk.





CueClass.

- Class: Four...All of them...Four or five...Two.
- Teacher: Yeah, I think it was two. It could have been three. I think it was two. But anyway, it was a very small number for the whole group. Do you think it was fair, then, for the Captain to punish everybody just because of two people in the group? ET
- Class: No...Yes...
- Teacher: What do you think, Martin? ET
- Martin: (unclear)
- Teacher: You don't think so? Okay? (acknowledging Donald) ET
- Donald: I think it's fair because he warned everybody that if anybody - that if one person did go on, then -
- Teacher (interrupting): Okay, you think it's fair because he told everybody. Everybody knew what the conditions were then, eh? Okay. Robert, do you agree with Donald? So if you were told something in class today as a class, and then a couple of boys misbehaved, and the class knows about it, is it fair to punish the whole class? ET
- Robert: No!
- ...
- Teacher: After those two kids had got on, and then they came off, then they started to worry about it, eh? Because they had started to think what was going to happen, possibly. Do you think they had a problem? (pause) What problem might they have? CT\*
- Pupil: Well, they were kind of worried because the Captain might have saw them, or -
- Teacher: Yes, they were worried that the Captain saw them, and they knew what the Captain had said...What maybe went through their minds when they were deciding what to do? DT
- (Pause. No response.) What conflicts did they have in their heads? (Pause. No response.) Were they going to tell the truth? DT
- Pupil: Some of them were. ET
- Teacher: Some of them were. Were they all going to? Stan? ET
- Stan: Nope.
- Teacher: So they have a bit of a problem right





|   | <u>Cue</u>   | <u>Class.</u> |
|---|--|---------------|
|   | there. <u>What do you think could happen if they told the truth?</u> Yes, Arthur?  | DT            |
| Arthur:                                     | Well, they might not be able to go on the boat -   |               |
| Teacher (interrupting):                     | Okay, that's one of the things that might happen. In fact, this is what they had been told, isn't it? <u>Donald?</u>   | DT            |
| Donald:                                     | The other kids would get mad at him.   |               |
| Teacher:                                    | Okay... <u>What do you think would happen if they lied?</u>  | DT            |
| Pupil:                                      | If...the Captain ever found out, then he would be mad, because then they'd get a ride on the boat, you know, that they didn't deserve at all -   |               |
| Teacher (interrupting):                     | Okay. Yeah, and the Captain would have found out and maybe later on, then, he would have been very disappointed. He would have <u>trusted people</u> , eh? And the kids would have lied to him, got a free ride on the boat -  | DT*           |
| Pupil (interrupting):                       | And maybe he might not have let anybody else go on the boat... Like if another class or something wanted to go on the boat, he might say, "Oh, no, because I already had an experience," and he wouldn't want to let them go.  |               |
| Teacher:                                    | Right. Maybe he'd stop other classes from going then, okay? <u>What do you think they'll do - at the end?</u>  | ET            |
| Pupils (several simultaneously):            | I think...I'd say they'll...(etc.)   |               |
| Teacher:                                    | Okay... <u>How many say they're going to tell the truth?</u>   | ET            |
| Class (show of hands)                       |  |               |
| Teacher (counting raised hands):            | One, two, three, four...(etc.) All right, there's about half - over half the class. Okay, now let's think about yourselves, eh? How many of you have been in a similar situation where ... you ended up in a conflict like this, whether you're going to tell the truth or not. <u>Can you think of any examples in your own life - at school, or at home?</u> | DT            |
| Pupil (who has been humming into the mike): | Lots:<br>.....   |               |



| <u>Teacher B</u> | <u>Cue</u>  | <u>Class.</u> |
|------------------|---|---------------|
| Teacher:         | We want to consider today...what decision the boy in the film is faced with. <u>What question does he have to answer for himself?</u> Jane?   | CT            |
| Jane:            | What should I do?   |               |
| Teacher:         | Okay. (Recognizes another pupil.)   | CT            |
| Pupil:           | What were they going to tell the guys when they came back.  |               |
| Teacher:         | Okay. What is your suggestion? What are your suggestions? Jim? <u>What should he do?</u> What choices does he have, first of all?   | ET*           |
| Jim:             | Well, he should tell the guys, but he doesn't really want to.   |               |
| Teacher:         | <u>Will he be lying if he doesn't tell?</u> Betty?  | ET            |
| Betty:           | Well, if he doesn't tell it wouldn't really be lying. He just doesn't tell them, and they'd never find out. They didn't break anything, or leave any finger prints -  |               |
| Teacher:         | <u>Mary?</u>  | ET*           |
| Mary:            | If the Captain asks, "Did anyone go on the boat?", then they'd have to say, "Yes, he did," or "No, they didn't," and then he's going to lie or tell the truth.  |               |
| Joe:             | Yeah, that's right.   |               |
| Teacher:         | <u>Joe?</u>   | ET*           |
| Joe:             | Well, um, I think he should tell the truth, because if he doesn't and they ever found out, they'd really offend Captain Connors.  |               |
| Teacher:         | Okay. <u>Anybody else?</u> David?   | ET*           |
| David:           | Well, I'd tell the truth, because like if they ever found out, well that Captain, he'd probably say, "Well, gee, I left one guy in charge. He was supposed to tell the truth. I trusted him," and all that, and when he found out that they lied he'd probably never take them out again on the boat, or nothing like that. |               |
| Teacher:         | All right. <u>Kay?</u>  | ET*           |
| Kay:             | Well, I'd tell the truth, because if he didn't tell the truth and they found out, they wouldn't trust anybody else - any other classes - because they'd think that they would be just as dishonest.   |               |



CueClass.

Teacher: Okay. Now just go back a minute. Now he's got two things he could do: he can tell them...right away as soon as they come back, that these three kids went on the boat...or he can wait, and be asked by Dave and the Captain if somebody went on the boat. Now consider ...One way, if they don't ask, and he doesn't tell them, is he lying? Lois, what do you think? ET

Lois: He's just keeping it from them -

Teacher: All right. Is he being honest, Nora? ET

Nora: No.

Pupil (simultaneously): No.

Teacher: No? CT

...

Teacher: Okay. Kathy? DT\*

Kathy: Somebody's just going to tell them that they did. Like, if there's nobody there on the boat, but somebody's going to tell them -

Pupil (interrupting): Yeah, there's always some guy who didn't like their lies.

Teacher: Okay. Colleen? DT\*

Colleen: Well, even if they said, "We didn't go on the boat," and they didn't find out, all the way on the boat they'd probably have "Guilty" written all over their faces.

Teacher: Okay. Sally? DT\*

Sally: They might go on the boat ride, and then they'd get half way over - Well, first of all, if they told him, then for telling the truth he might still take them, but if he just waited until they were half way on the boat ride and then he finally tells them, they won't trust anybody for a long time after that -

Pupil (interrupting): He'd probably throw them all over the side of the boat.

Teacher (ignoring interrupter and responding to Sally): Okay. Now just think for a minute about what some of the kids said ...when they were advising Patrick... Now there were some that had one opinion and some that had the other opinion. What were these, Ted? CM

Ted: Well, I think her name was \_\_\_\_\_, she said that you should tell the truth, --(unclear)-- even better than lying.







|                                  | <u>Cue</u>   | <u>Class.</u> |
|----------------------------------|--|---------------|
| Teacher:                         | Okay. <u>John?</u>   | CM            |
| ...                              |  |               |
| Teacher:                         | Okay. So there's lots of things that were affecting Patrick's decision. He said at the end, "What should I do?" <u>How much attention is he going to pay to the opinions of the other kids?</u> Pauline?   | ET            |
| Pauline:                         | Well, he'll listen to them and then he'll decide which idea is best.   |               |
| Teacher:                         | So there's two things that are influencing his decision, right? One of them is his friends, his peers, and <u>what's the other thing, Donald?</u>  | CT            |
| Donald:                          | Well, like, if he listens to them he might get himself in trouble, not them.   |               |
| Teacher:                         | Okay, then he's listening to his friends. <u>What's the other thing that is influencing his decision?</u> Mary?  | CT            |
| Mary:                            | What he thinks.  |               |
| Teacher:                         | What he thinks. <u>There's something inside of him, called what?</u>   | CT            |
| Pupils (several simultaneously): | Conscience.  |               |
| Teacher:                         | Conscience. Right. Okay, so when you're making a decision: Should I tell the truth, or...even if nobody asks me, you know, I'm not lying, because <u>if I don't say anything and nobody asks me then that's not really lying, is it?...</u> Ann? | ET*           |
| Ann:                             | Well, I wouldn't think he was...being honest, because even if they didn't ask him....he wouldn't feel very good...and he'd have to tell it sometime.   |               |
| Teacher:                         | So you think he wouldn't be being honest. Others? <u>Patsy?</u>  | ET            |
| ...                              |  |               |
| Teacher:                         | Okay. Nora, <u>what are some of the things that could result from the decisions that he makes?</u>   | DT            |
| Nora:                            | Well, if he tells them...if they ask him what he did, and then he says they did, they might not be able to go on the ride.   |               |
| Teacher:                         | Okay. That's a consequence. Phyllis, <u>what else?</u>   | DT            |
| Phyllis:                         | Well, uh, if he doesn't tell them, like if they don't ask him or something, and he doesn't tell them, and then they go on the boatride, they'd probably all feel bad that they didn't tell them.   |               |
| Teacher:                         | Okay. <u>Claudette?</u>  | DT            |



CueClass.

Claudette: Well, like if they tell them, then maybe for telling the truth they'll let them go on the boat.

Teacher: Okay, so there's another thing that might happen. Ken? DT

Ken: Well, uh, like I was kinda sorry for that guy, because if he told maybe he might not have been able to go, and maybe those other guys got to go.

Teacher: Okay. Tom? DT

Tom: Well, let's say...(etc.)...Than all the other guys would say, "He went too." And he'd say -

Teacher (interrupting): Okay. But what did the Captain say when he left? He gave them instructions, Lois. What were they? CM

Lois: He said, "Make sure to obey all my orders, and to stay off the boat until we come back."

Teacher: What else? He added something to that. CM

Sally: Sally?

Sally: He told them to make sure that everybody stayed off the boat, and to make sure they all stayed together on the dock.

Teacher: Anything else? Colleen? CM

Colleen: That if one person went on the boat he'd wreck it for everybody else.

Teacher: Okay. So that's important in his decision. Now...if he tells right away, what are some of the other children going to think of him? DT

Pupil: Squealer.

Teacher: Squealer's one...What else?...Larry? DT

Larry: Well, they're not going to really be his friends anymore, because then he's going to give up that thing, and if they don't get to go, they're all going to blame it on him.

Teacher: All of them, do you think? CT

Pupils (simultaneously): Yeah...No...etc..

Teacher: Just one at a time, please. Claudette? CT

Claudette: Well...they probably think that he's a brat because he ruined it for everybody, but he didn't really ruin it. The people that went on the boat did.

Teacher: Okay. Chris? CT

Chris: Well, some guys are gonna think, "Oh, that's--(unclear)--He's no good." But some other guys might think, "He did the right thing, because these guys went on and they shouldn't have."

.....



| <u>Teacher C</u>                 | <u>Cue</u>   | <u>Class.</u> |
|----------------------------------|--|---------------|
| Opening sequence missed on tape. |  |               |
| Teacher:                         | All right. <u>What else?</u> Dick?   | CM            |
| Dick:                            | They were to obey.   |               |
| Teacher:                         | All right. <u>Anything else?</u> Jack?   | CM            |
| Jack:                            | A boy couldn't make up his mind whether he was going to tell the truth or lie.   |               |
| Teacher:                         | All right. <u>The truth about what?</u> George?  | CM            |
| George:                          | About getting on the boat when the skipper - the Captain - told them not to.   |               |
| Teacher:                         | All right. And <u>did he tell one person not to go on, or more than one?</u> Fred?   | CM            |
| Fred:                            | He told them all.  |               |
| Teacher:                         | He told them all. All right. <u>Anything else?</u> Yes   | CM            |
| Pupil:                           | If anybody...went on the ship, they couldn't go with the bunch from the daycamp.   |               |
| Teacher:                         | All right. The children thought it was something great to go on the ship with the bunch from the daycamp. <u>Anything else?</u> Yes?                           | CM            |
| Pupil:                           | They seen a sailing boat.  |               |
| Teacher:                         | They saw a sailing boat? Yes. All right. <u>What about the title of the filmstrip?</u> Does somebody remember what it was?                                     | CM            |
| Pupil:                           | The Trouble with Truth.  |               |
| Teacher:                         | All right. <u>Do you think this is an appropriate title for the filmstrip that you saw?</u>  | ET            |
| Pupil:                           | Yes.   |               |
| Teacher:                         | Why? <u>Why would you say it is an appropriate...title?</u> Dick?  | CT            |
| Dick:                            | Because he didn't...know if he should tell the truth.  |               |
| Teacher:                         | That's right. <u>Do you have trouble sometimes when you have to tell the truth and you're not sure if you should or not?</u> Jack?                             | CM            |
| Jack:                            | Yes.   |               |
| Teacher:                         | <u>Why?</u>  | CT            |
| Jack:                            | Well, like they wanted all to go for a ride. And he just wouldn't make up his mind.  |               |
| Teacher:                         | That's right. So sometimes you sort of have to struggle with your conscience, right? Should I tell or should I not? And if it's the truth, you should actually |               |





CueClass.

- try and tell shouldn't you? Right? Now, how old were the children about? The children that you saw in the film, how old were they, do you think? CT
- Pupil: Eight.
- Teacher: About eight or nine? CT
- Pupil: Seven or eight.
- Teacher: Seven or eight? \_\_\_\_\_? (another pupil) CT
- Pupil: Six or seven.
- Teacher: All right. Probably they would be... maybe about eight, nine, or maybe ten years old, right? Now, how many adults were there? CM
- Pupil: Two.
- Teacher (ignoring respondent): How many adults? Richard?
- Richard: Two.
- Teacher: All right. Do you remember what their names were? Remember their names, Peter? CM
- Peter: No.
- Teacher: Who remembers their names? CM
- Pupil: One was Dave, and the other was, uh...
- Teacher: Can somebody help him out? Yes? CM
- Pupil: The Captain. Captain, uh...
- Pupil: Connors.
- Teacher: Connors, right. Captain Connors. All right. When the Captain left with Dave, do you think it was necessary for him to choose a leader? Was it important? ET
- Pupil: No, because he probably thought that they could - that he could trust them.
- Teacher: How about you saying "No"? Does everybody agree with him? Do you think that he didn't have to choose a leader at all? He could have just left all the others - all the children there without a leader? You all agree? Jack? CT
- Jack: He should...uh...he's glad that he should have, because, well, like...then, uh... he would have told the other ones to keep off the ship, but if he never picked a captain, then, uh, they'd all go on -
- Teacher (interrupting): All right.
- Jack (continuing): -because then no one would tell.
- Teacher: (Pause) Do you think so? Carol? CT
- Carol: Yes. They didn't want a captain to be picked, so they could still go on the ride.
- Teacher: So in other words, if he wouldn't have chosen a leader, all the kids would have stayed off the boat. Right? Yes or no? CT





|   | <u>Cue</u>  | <u>Class.</u> |
|---|---|---------------|
| Pupil:                                  | Yes.  |               |
| Teacher:                                | Yes? <u>You think they would all have stayed off if they hadn't - didn't have a leader?</u>   | CT            |
| Pupil (another):                        | No, they'd all go on.   |               |
| Teacher:                                | They possibly would <u>all</u> have gone on if they didn't have a leader, right?... <u>The leader sort of felt - what? He felt he was - ?</u>                                     | CT            |
| Jack:                                   | <u>Responsible.</u>   |               |
| Teacher:                                | Responsible, right. He felt he was responsible. <u>And one of his reasons was -?</u>  | CT            |
| Pupil:                                  | It was his duty to keep them off.   |               |
| Teacher:                                | Right. It was his duty to keep them off, and some of them went anyway. <u>Now what's going to happen about that? Yes?</u>   | CM*           |
| Pupil:                                  | He might tell, uh, a lie, or tell the truth.  |               |
| Teacher:                                | All right. What do you think he's going to say? We didn't see what happened, did we? <u>What do you think he is going to say? Dick?</u>   | ET            |
| Dick:                                   | He's gonna, uh, lie, because he wants to go on the boatride.  |               |
| Teacher (calling on another pupil):     | <u>What do you think?</u>   | ET            |
| Pupil:                                  | I think he'll tell the truth, because if he lies and the Captain finds out, he'd be very angry.   |               |
| Teacher (calling on a different pupil): | <u>What do you think?</u>   | ET            |
| Pupil:                                  | I think he's going to tell the truth and ask if they can still go on the boat.  |               |
| Teacher:                                | All right. That's quite a good answer. <u>Yes?</u>  | ET            |
| Pupil (another):                        | I think he's going to tell the truth, because if he doesn't - if he lies to the Captain and the Captain finds out - he wouldn't ever be able to be trusted again.                 |               |
| Teacher:                                | All right. <u>How many of us like to, uh, not be trusted?...I don't think any of us like that, do we? We all want to be trusted. Any other comments? What do you think, Jack?</u> | CM            |
| Jack:                                   | He's going to lie. Because...if he tells the truth, then the Captain might not let them go, so he's gonna lie so that they all can get a ride.                                    | ET*           |
| Teacher:                                | <u>Do you think a person should lie so he gets a chance of being able to go?</u>  | ET            |



CueClass.

Jack: I'd tell the truth, but I think he's going to lie.

Teacher: You think he's going to lie. \_\_\_\_\_? ET\*

(calling on another pupil)

Pupil: I think he's better...telling the truth is better, because if he tells the truth, the Captain will understand.

Teacher: All right. Dick? ET\*

Dick: Can I change mine?

Teacher: Yes, you can change it.

Dick: I think he's going to tell the truth. Like he -

Teacher (interrupting): All right. Why do you change your mind? CT

Dick: Well, he's - it's better not to lie, and he's gonna ask him if he'll still take them on the trip.

Teacher: All right. So let us say he tells the truth. Do you think the Captain is going to take them anyways?...Mary? ET

Mary: Yes.

Teacher: Yes? Why? CT

Mary: Because he told the truth.

Teacher: Yes, well why should he, you know, even if he does tell the truth? Because the Captain said that if anybody goes on the boat he would not let anybody else go. CT

Mary: Yes, but if he would still be honest enough to tell him, then for being honest he would let them go.

...

Teacher: All right. What would you have said, if it had been you instead of Patrick? ET

Pupil: I'd tell the truth because I like to be truthful. I like to be trusted.

Teacher: All right. Jack? ET

Jack: That's what I was going to say too. I'd tell the truth so then...he would trust us.

Teacher: All right. So that means being trusted is something very - ? CM

Jack: Important.

Teacher: Important. Very important. All right. Now...let us say that, for example, in the classroom you were asked to be a leader. What do you think your job would be? Donald? CT

Donald: To keep the class quiet...like if you're the head of the class when the teacher goes out.

.....



## APPENDIX E

Unadjusted Mean Scores

IQ, Sex, and Mean Moral Judgment Scores  
for Three Class Groups

| Class | Mean<br>IQ | N    |       | Mean Moral Judgment Score |          |          |       |
|-------|------------|------|-------|---------------------------|----------|----------|-------|
|       |            |      |       | Pretest                   | Posttest |          |       |
|       |            | Boys | Girls |                           | Direct   | Indirect | Total |
| A     | 108        | 16   | 7     | 185                       | 190      | 180      | 185   |
| B     | 109        | 8    | 18    | 179                       | 199      | 185      | 193   |
| C     | 102        | 10   | 10    | 168                       | 177      | 173      | 174   |

Mean Pretest Moral Judgment Scores and  
Raw Change Scores for Three Class Groups

| Class | N  | Pretest<br>Moral<br>Judgment<br>Score | Raw Change Scores |          |       |
|-------|----|---------------------------------------|-------------------|----------|-------|
|       |    |                                       | Direct            | Indirect | Total |
| A     | 23 | 185                                   | 5                 | -5       | 0     |
| B     | 26 | 179                                   | 20                | 6        | 14    |
| C     | 20 | 168                                   | 9                 | 5        | 6     |





## APPENDIX E (cont.)

Mean Moral Judgment Scores for High, Medium,  
and Low Frequency of Class Participation

| Frequency<br>of Class<br>Partici-<br>pation | N  | Pretest<br>Moral<br>Judgment<br>Score | Posttest |          |       |
|---|----|---------------------------------------|----------|----------|-------|
|   |    |                                       | Direct   | Indirect | Total |
| High  | 20 | 191                                   | 199      | 186      | 193   |
| Medium                                      | 28 | 179                                   | 191      | 185      | 188   |
| Low   | 21 | 164                                   | 180      | 167      | 175   |

Mean Moral Judgment Scores for High, Medium,  
and Low Cognitive Level of Class Participation

| Cognitive<br>Level of<br>Class Parti-<br>cipation | N  | Pretest<br>Moral<br>Judgment<br>Score | Posttest |          |       |
|---|----|---------------------------------------|----------|----------|-------|
|   |    |                                       | Direct   | Indirect | Total |
| High  | 18 | 186                                   | 199      | 187      | 194   |
| Medium  | 35 | 181                                   | 189      | 181      | 185   |
| Low   | 16 | 162                                   | 182      | 170      | 178   |



## APPENDIX E (cont.)

## Mean Moral Judgment Scores

## for Boys and Girls

| Group | N  | Pretest<br>Moral<br>Judgment<br>Score | Posttest |          |       |
|-------|----|---------------------------------------|----------|----------|-------|
|       |    |                                       | Direct   | Indirect | Total |
| Boys  | 34 | 181                                   | 196      | 188      | 192   |
| Girls | 35 | 174                                   | 184      | 172      | 178   |

## Mean Moral Judgment Scores

## for High and Low IQ Groups

| IQ   | N  | Pretest<br>Moral<br>Judgment<br>Score | Posttest |          |       |
|------|----|---------------------------------------|----------|----------|-------|
|      |    |                                       | Direct   | Indirect | Total |
| High | 28 | 184                                   | 200      | 189      | 195   |
| Low  | 28 | 168                                   | 177      | 170      | 174   |



## REFERENCES

- Alston, W. P. Comments on Kohlberg's "From is to ought". In T. Mischel (Ed.), Cognitive development and epistemology. New York: Academic Press, 1971.
- Anastasi, A. Psychological testing. (4th ed.). New York: Macmillan, 1976.
- Aronfreed, J. The concept of internalization. In D. A. Goslin (Ed.), Handbook of socialization theory and research. Chicago: Rand McNally, 1969.
- Aronfreed, J. Moral development from the standpoint of a general psychological theory. In T. Lickona (Ed.), Moral development and behavior: Theory, research, and social issues. New York: Holt, Rinehart, & Winston, 1976.
- Aschner, M. J. The analysis of verbal interaction in the classroom. In A. A. Bellack (Ed.), Theory and research in teaching. New York: Teachers College Press, Columbia University, 1963.
- Aschner, M. J., Gallagher, J. J., Jenné, W. C., Perry, J., Farr, H., & Afsar, S. A system for classifying thought processes in the context of classroom verbal interaction. Champaign, Illinois: Institute for Research on Exceptional Children, 1963.
- Aschner, M. J., Gallagher, J. J., Jenné, W. C., Perry, J., Farr, H., & Afsar, S. Aschner-Gallagher system for classifying thought processes in the context of classroom verbal interaction. Urbana, Ill.: University of Illinois, 1965.
- Baier, K. Ethical pluralism and moral education. In C. M. Beck, B. S. Crittenden, & E. V. Sullivan (Eds.), Moral education: Interdisciplinary approaches. Toronto: University of Toronto Press, 1971.
- Baldwin, J. M. Social and ethical interpretations in mental development. New York: Macmillan, 1906.
- Bandura, A. Social-learning theory of identificatory processes. In D. A. Goslin (Ed.), Handbook of socialization theory and research. Chicago: Rand McNally, 1969.
- Bearison, D., & Isaacs, L. Production deficiency in children's moral judgments. Developmental Psychology, 1975, 11, 732-737.





- Bellack, A. A. Personal communication, January, 1974.
- Bellack, A. A., Kleibard, H. M., Hyman, R. T., & Smith, F. L. The language of the classroom. New York: Teachers College Press, Columbia University, 1966.
- Berndt, R. J., & Berndt, E. C. Children's use of motives and intentionality in person perception and moral judgment. Child Development, 1975, 46, 904-912.
- Blat, M., & Kohlberg, L. The effects of classroom moral discussion upon children's level of moral judgment. In L. Kohlberg (Ed.), Collected papers on moral development and moral education. Cambridge: Center for Moral Development and Education, Harvard University, 1973.
- Breznitz, S., & Kugelmass, S. Intentionality in moral judgment: Developmental stages. Child Development, 1967, 38, 469-479.
- Chandler, M., Greenspan, S., & Barenboim, C. Judgments of intentionality in response to videotaped and verbally presented dilemmas: The medium is the message. Child Development, 1973, 44, 315-320.
- Costanzo, P., Coie, J., Grumet, J., & Farnill, D. A reexamination of the effects of intent and consequences on children's moral judgments. Child Development, 1973, 44, 154-161.
- Crittenden, B. Form and content in moral education (Monograph Series No. 12). Toronto: Ontario Institute for Studies in Education, 1972.
- Cronback, L. J., & Furby, L. How we should measure "change" - or should we? Psychological Bulletin, 1970, 74(1), 68-80.
- Cronbach, L. J., Gleser, G. C., Nanda, A. N., & Rajaratnam, N. The dependability of behavioral measurements: Theory of generalizability for scores and profiles. New York: John Wiley, 1972.
- Crowley, P. M. Effects of training upon objectivity of moral judgment in grade-school children. Journal of Personality and Social Psychology, 1968, 8, 228-233.





- Damon, W. Studying early moral development: Some techniques for interviewing young children and for analyzing the results. In J. Meyer, B. Burnham, & J. Chovat (Eds.), Values education: Theory, practice, problems, prospects. Waterloo: Wilfrid Laurier University Press, 1975.
- Davis, O. L., & Tinsley, D. C. Cognitive objectives revealed by classroom questions asked by social studies student teachers. In R. T. Hyman (Ed.), Teaching: Vantage points for study. New York: Lippincott, 1968.
- Dewey, J. Moral principles in education. New York: Philosophical Library, 1959. (Originally published, 1909.)
- Ewanyk, D. A. Disequilibrium as a source of inducing higher moral reasoning in delinquent boys. Unpublished master's thesis, University of Alberta, 1973.
- Eysenck, H. J. Crime and personality. London: Routledge & Kegan Paul, 1964.
- Eysenck, H. J. The biology of morality. In T. Lickona (Ed.), Moral development and behavior: Theory, research, and social issues. New York: Holt, Rinehart, & Winston, 1976.
- Feffer, M. H. The cognitive implication of role-taking behavior. Journal of Personality, 1959, 27, 152-168.
- Feffer, M. H. Developmental analysis of interpersonal behavior. Psychological Review, 1971, 77, 197-214.
- Ferguson, G. A. Statistical analysis in psychology and education. (2nd ed.). New York: McGraw-Hill, 1966.
- Festinger, L. A theory of cognitive dissonance. Evanston, Ill.: Row Petersen, 1957.
- Flanders, N. A. Teacher influence, pupil attitudes and achievement (Final report, Cooperative Research Project, N. 397, U. S. Office of Education). University of Minnesota, 1960.
- Flanders, N. A. Analysing teacher behavior. Reading: Addison-Wesley, 1970.



- Flavell, J. H. The development of role-taking and communication skills in children. New York: Wiley, 1968.
- Flavell, J. H., & Wohlwill, J. Formal and functional aspects of cognitive development. In D. Elkind & J. Flavell (Eds.), Studies in cognitive development. New York: Oxford University Press, 1969.
- Gallagher, J. Teaching the gifted child. Boston: Allyn & Bacon, 1964.
- Gallagher, J., & Aschner, M. J. A preliminary report on analyses of classroom interaction. In R. T. Hyman (Ed.), Teaching: Vantage points for study. New York: Lippincott, 1968.
- Gallagher, J., Aschner, M. J., & Jenne, W. Productive thinking of gifted children. Washington, D.C.: Council for Exceptional Children, National Education Association, 1967.
- Gash, H. Moral judgment: A comparison of two theoretical approaches. Genetic Psychology Monographs, 1976, 93, 91-111.
- Gibbs, J. C. The Piagetian approach to moral development: An overview. In J. Meyer, B. Burnham, & J. Cholvat (Eds.), Values education: Theory, practice, problems, prospects. Waterloo: Wilfrid Laurier University Press, 1975.
- Gilligan, J. Beyond morality: Psychoanalytic reflections on shame, guilt, and love. In T. Lickona (Ed.), Moral development and behavior: Theory, research, and social issues. New York: Holt, Rinehart, & Winston, 1976.
- Graham, D. Moral learning and development. New York: Wiley & Sons, 1972.
- Guilford, J. P. The structure of intellect. Psychological Bulletin, 1956, 53, 267-293.
- Guilford, J. P. Three faces of intellect. American Psychologist, 1959, 14, 469-479.
- Guilford, J. P. Intelligence: 1965 model. American Psychologist, 1966, 21, 20-26.
- Guilford, J. P., & Hoepfner, R. The analysis of intelligence. New York: McGraw-Hill, 1971.



- Guzak, J. F. A study of teacher solicitation and student response interaction about reading content in selected second, fourth, and sixth grades. Unpublished doctoral dissertation, University of Wisconsin, 1966.
- Haan, N., Smith, M. B., & Block, J. Moral reasoning of young adults: Political-social behavior, family background, and personality correlates. Journal of Personality and Social Psychology, 1968, 10, 183-201.
- Hall, R. T., & Davis, J. U. Moral education in theory and practice. Buffalo: Prometheus Books, 1975.
- Hall, C. S., & Lindzey, G. Theories of personality. New York: Wiley, 1957.
- Harris, C. W. Problems of measuring change. Madison: University of Wisconsin Press, 1963.
- Hartshorne, H., & May, M. A. Studies in the nature of character. Vol. 1: Studies in deceit. New York: Macmillan, 1928.
- Hartshorne, H., & May, M. A. Studies in the nature of character. Vol. 2: Studies in self-control. New York: Macmillan, 1929.
- Hartshorne, H., May, M. A., & Shuttlesworth, F. K. Studies in the nature of character. Vol. 3: Studies in the organization of character. New York: Macmillan, 1930.
- Harvey, O. J., Hunt, D. E., & Schroder, H. N. Conceptual systems and personality organization. New York: Wiley, 1961.
- Havighurst, R. J., & Taba, H. Adolescent character and personality. New York: Wiley, 1949.
- Hendry, L. S. Cognitive processes in a moral conflict situation. Unpublished doctoral dissertation, Yale University, 1960.
- Hogan, R. A dimension of moral judgment. Journal of Consulting and Clinical Psychology, 1970, 35, 205-212.
- Hogan, R. Moral conduct and moral character: A psychological perspective. Psychological Bulletin, 1973, 79(4), 217-232.







- Hogan, R. Dialectical aspects of moral development. Human Development, 1974, 17, 107-117.
- Holstein, C. Parental consensus and interaction in relation to the child's moral judgment. Unpublished doctoral dissertation, University of California, Berkeley, 1969.
- Holstein, C. The relation of children's moral judgment level to that of their parents and to communicated patterns in the family. In R. C. Smart & M. S. Smart (Eds.), Readings in child development and relationships. New York: Macmillan, 1972.
- Holstein, C. Moral judgment change in early adolescence and middle age: A longitudinal study. Paper presented at the biennial meeting of the Society for Research in Child Development, Philadelphia, Pennsylvania, March, 1973.
- Hunt, D. E. A conceptual systems change model and its application to education. In O. J. Harvey (Ed.), Experience, structure, and adaptability. New York: Springer-Verlag, 1966.
- Hunt, D. E., & Halverson, C. Manual for scoring sentence completion responses for adolescents. Unpublished scoring manual, Syracuse University, 1964.
- Inhelder, B., & Piaget, J. The growth of logical thinking from childhood to adolescence. New York: Basic Books, 1958.
- Kay, A. W. Moral development: A psychological study of moral growth from childhood to adolescence. New York: Schocken Books, 1969.
- Keasey, C. B. Social participation as a factor in the moral development of preadolescents. Developmental Psychology, 1971, 5(2), 216-220.
- Keasey, C. B. Experimentally induced changes in moral opinions and reasoning. Journal of Personality and Social Psychology, 1973, 26, 30-38.
- Keasey, C. B. The influence of opinion agreement and quality of supportive reasoning in the evaluation of moral judgments. Journal of Personality and Social Psychology, 1974, 30, 477-482.



- Kohlberg, L. The development of modes of moral thinking in the years ten to sixteen. Unpublished doctoral dissertation, University of Chicago, 1958.
- Kohlberg, L. Moral development and identification. In H. W. Stevenson (Ed.), Yearbook of the National Society for the Study of Education: Pt. 1; Child psychology. Chicago: University of Chicago Press, 1963.
- Kohlberg, L. Development of moral character and moral ideology. In M. L. Hoffman & L. W. Hoffman (Eds.), Review of child development research. New York: Russell Sage Foundations, 1964.
- Kohlberg, L. Stage and sequence: The cognitive-developmental approach to socialization. In D. A. Goslin (Ed.), Handbook of socialization theory and research. Chicago: Rand McNally, 1969. (a)
- Kohlberg, L. The relations between moral judgment and moral action: A developmental view. Paper presented at the Institute of Human Development, University of California, Berkeley, 1969. (b)
- Kohlberg, L. Stages of moral development as a basis for moral education. In C. N. Beck, B. S. Crittenden, & E. V. Sullivan (Eds.), Moral education: Interdisciplinary approaches. Toronto: University of Toronto Press, 1971. (a)
- Kohlberg, L. From is to ought. In T. Mischel (Ed.), Cognitive development and epistemology. New York: Academic Press, 1971. (b)
- Kohlberg, L. Notes towards stage seven. Unpublished lecture, Harvard University, 1971. (c)
- Kohlberg, L. The concepts of developmental psychology as the central guide to education. In M. Reynolds (Ed.), Psychology and the process of schooling in the next decade. Minneapolis: Department of Audio-Visual Extension, University of Minnesota, 1972. (a)
- Kohlberg, L. The issue scoring manual. Unpublished manuscript, Harvard University, Cambridge, Mass., June, 1972. (b)



- Kohlberg, L. Continuities and discontinuities in childhood and adult moral development revisited. In P. B. Baltes & K. W. Schaie (Eds), Life-span developmental psychology: Personality and socialization. New York: Academic Press, 1973. (a)
- Kohlberg, L. Stages and aging in moral development: Some speculations. The Gerontologist. 1973, 13, 497-502. (b)
- Kohlberg, L. Moral stages and moralization: The cognitive-developmental approach. In T. Lickona (Ed.), Moral development and behavior: Theory, research, and social issues. New York: Holt, Rinehart, & Winston, 1976.
- Kohlberg, L., Colby, A., Speicher-Dubin, B., & Lieberman, M. Standard form scoring manual. Cambridge: Moral Education Research Foundation, 1975.
- Kohlberg, L., & Kramer, R. Continuities and discontinuities in childhood and adult moral development. Human Development, 1969, 12, 93-120.
- Kohlberg, L., & Mayer, R. Development as the aim of education. Harvard Educational Review, 1972, 42, 449-496.
- Kohlberg, L., & Turiel, E. Moral development and moral education. In G. Lesser (Ed.), Psychology and educational practice. Glenview: Scott Foresman, 1971.
- Kramer, R. B. Changes in moral judgment response pattern during late adolescence and young adulthood: Retrogression in a developmental sequence. Unpublished doctoral dissertation, University of Chicago, 1968.
- Krebs, R. L. Some relationships between moral judgment, attention and resistance to temptation. Unpublished doctoral dissertation, University of Chicago, 1967.
- Krebs, R., & Kohlberg, L. Moral judgment and ego controls as determinants of resistance to cheating. Unpublished manuscript, Center for Moral Education, Harvard University, Cambridge, Mass., 1973.
- Kuhn, D. Short-term longitudinal evidence for the sequentiality of Kohlberg's early stages of moral judgment. Developmental Psychology, 1976, 12(2), 162-166.





- Kuhn, D., Langer, J., Kohlberg, L., & Haan, N. The development of formal operations in logical and moral judgment. Unpublished manuscript, Columbia University, 1972.
- Kurtines, W., & Greif, E. G. The development of moral thought: Review and evaluation of Kohlberg's approach. Psychological Bulletin, 1974, 81, 453-470.
- Langer, J. Disequilibrium as a source of development. In P. Mussen, J. Langer, & M. Covington (Eds.), Trends and issues in development psychology. New York: Holt, Rinehart, & Winston, 1969.
- Lee, L. C. The concomitant development of cognitive and moral modes of thought: A test of selected deductions from Piaget's theory. Genetic Psychology Monographs, 1971, 83, 93-146.
- Lickona, T (Ed.) Moral development and moral behavior: Theory, research, and social issues. New York: Holt, Rinehart, & Winston, 1976.
- Lickona, T. Research on Piaget's theory of moral development. In T. Lickona (Ed.), Moral development and behavior: Theory, research, and social issues. New York: Holt, Rinehart, & Winston, 1976.
- Lieberman, M. Estimation of a moral judgment level using items whose alternatives form a graded scale. Unpublished doctoral dissertation, University of Chicago, 1971.
- Lockwood, A. L. Stages of moral reasoning in students' analysis of public value controversy. Unpublished doctoral dissertation, Harvard University, 1970
- Loevinger, L., & Wessler, R. Measuring ego development by sentence completions, I: Theoretical and methodological issues. Paper presented to the American Psychological Association, San Francisco, August 31, 1968.
- Lord, F. M. Large-sample covariance analysis when the control variable is fallible. Journal of the American Statistical Association, 1960, 55, 307-321.
- Lord, F. M. Elementary models for measuring change. In C. W. Harris (Ed.), Problems in measuring change. Madison: University of Wisconsin Press, 1963.





- Macdonald, J. B., & Zaret, E. A study of openness in classroom interactions. In R. T. Hyman (Ed.), Teaching: Vantage points for study. New York: Lippincott, 1968.
- Macdonald, J. B. & Zaret, E. Report of a study of openness in classroom interactions. In A. Simon & E. Boyer (Eds.), Mirrors for behavior (Vol. 10). Philadelphia: Classroom Interaction Report, 1970.
- Magowan, S. A., & Lee, T. Some sources of error in the use of the projective method for the assessment of moral judgment. British Journal of Psychology, 1970, 61, 535-543.
- Mischel, W., & Mischel, H. N. A cognitive social-learning approach to morality and self-regulation. In T. Lickona (Ed.), Moral development and behavior: Theory, research, and social issues. New York: Holt, Rinehart, & Winston, 1976.
- Mead, G. H. Mind, self and society from the standpoint of a social behaviorist. Chicago: University of Chicago Press, 1934.
- Meux, M. The evaluating process in the classroom. In A. A. Bellack (Ed.), Theory and research in teaching. New York: Teachers College Press, Columbia University, 1963.
- Moir, D. J. Egocentrism and the emergence of conventional morality in preadolescent girls. Child Development, 1974, 54, 299-304.
- Neureiter, C. Personal communication, February, 1973.
- Owen, C. Cross-cultural studies of moral development. Unpublished doctoral dissertation, University of Chicago, 1968.
- Peck, R. H., & Havighurst, R. J. The psychology of character development. New York: Wiley, 1960.
- Piaget, J. The general problems of the psychobiological development of the child. In J. M. Tanner & B. Inhelder (Eds.), Discussions on child development: Proceedings of the World Health Organization study group on the psychobiological development of the child (Vol. 4). New York: International Universities Press, 1960.
- Piaget, J. The origins of intelligence in children. New York: Norton, 1963.



- Piaget, J. The moral judgment of the child. New York: The Free Press, 1965. (Originally published, 1932.)
- Piaget, J. Six psychological studies. New York: Random House, 1967. (Originally published, 1964.)
- Piaget, J. Structuralism. New York: Basic Books, 1970.
- Piaget, J. Biology and knowledge. Chicago: University of Chicago Press, 1971.
- Piaget, J., & Inhelder, B. The psychology of the child. New York: Basic Books, 1969.
- Pinard, A., & Laurendeau, M. "Stage" in Piaget's cognitive-developmental theory: Exegesis of a concept. In D. Elkind & J. Flavell (Eds.), Studies in cognitive development. New York: Oxford University Press, 1969.
- Porter, N., & Taylor, N. How to assess the moral reasoning of students: A teacher's guide to the use of Lawrence Kohlberg's stage-developmental method (Profiles of practical education No. 8). Toronto: Ontario Institute for Studies in Education, 1972.
- Rest, J. R. The hierarchical nature of moral judgment: A study of comprehension and preference of moral stages. Journal of Personality, 1973, 41, 86-109.
- Rest, J. R. Developmental psychology as a guide to value education: A review of "Kohlbergian" programs. Review of Educational Research, March, 1974. (a)
- Rest, J. R. The cognitive-developmental approach to morality: The state of the art. Counseling and Values, 1974, 18(2), 64-78. (b)
- Rest, J. R. The validity of tests of moral judgment. In J. Meyer, B. Burnham, & J. Cholvat (Eds.), Values education: Theory, practice, problems, prospects. Waterloo: Wilfrid Laurier University Press, 1975.
- Rest, J. R. New approaches in the assessment of moral judgment. In T. Lickona (Ed.), Moral development and behavior: Theory, research, and social issues. New York: Holt, Rinehart, & Winston, 1976.
- Rest, J. R., Cooper, D., Coder, R., Masanz, J., & Anderson, D. Judging the important issues in moral dilemmas - an objective measure of development. Developmental Psychology, 1974, 10(4), 491-501.





- Rest, J. R., Turiel, E., & Kohlberg, L. Level of moral development as a determinant of preference and comprehension of moral judgments made by others. Journal of Personality, 1969, 37, 225-252.
- Rothman, G. Personal communication, February, 1974.
- Saltzstein, H. D., Diamond, R. M., & Belenky, M. Moral judgment level and conformity behavior. Developmental Psychology, 1972, 7, 327-336.
- Scheffé, H. The analysis of variance. New York: Wiley, 1959.
- Selman, R. The relation of role taking to the development of moral judgment in children. Child Development, 1971, 42, 79-91.
- Selman, R. A developmental approach to interpersonal and moral awareness in young children: Some theoretical and educational implications of levels of social perspective taking. In J. Meyer, B. Burnham, & J. Chovat (Eds.), Values education: Theory, practice, problems, prospects. Waterloo: Wilfrid Laurier University Press, 1975.
- Selman, R. Social-cognitive understanding: A guide to educational and clinical practice. In T. Lickona (Ed.), Moral development and behavior: Theory, research, and social issues. New York: Holt, Rinehart, & Winston, 1976.
- Selman, R., & Byrne, D. A structural-developmental analysis of levels of role taking in middle childhood. Child Development, 1974, 45, 803-806.
- Simpson, E. L. Moral development research: A case study of scientific cultural bias. Human Development, 1974, 17, 81-106.
- Simpson, E. L. A holistic approach to moral development and behavior. In T. Lickona (Ed.), Moral development and behavior: Theory, research, and social issues. New York: Holt, Rinehart, & Winston, 1976.
- Skinner, B. F. Beyond freedom and dignity. New York: Knoff, 1971.
- Smith, B. O., & Meux, M. A study of the logic of teaching. Urbana, Ill.: Bureau of Educational Research, University of Illinois, 1962.





- Sullivan, E. V. Moral learning: Findings, issues, and questions. New York: Paulist Press, 1975.
- Sullivan, E. V., McCullough, G., & Stager, M. A developmental study of the relationship between conceptual, ego, and moral development. Child Development, 1970, 64, 231-242.
- Taba, H., & Elzey, F. Teaching strategies and thought processes. Teachers College Record, 1964, 65, 524-534.
- Tomlinson-Keasey, C., & Keasey, C. B. The mediating role of cognitive development in moral judgment. Child Development, 1974, 45, 291-298.
- Tracy, J. J., & Cross, H. J. Antecedents of shift in moral judgment. Journal of Personality and Social Psychology, 1973, 26(2), 238-244.
- Tucker, L. R., Damarin, F., & Messick, S. A base-free measure of change. Psychometrika, 1966, 31, 457-473.
- Turiel, E. An experimental test of developmental stages in the child's moral judgments. Journal of Personality and Social Psychology, 1966, 3, 611-618.
- Turiel, E. An historical analysis of the Freudian conception of the superego. Psychoanalytic Review, 1967, 54, 118-140.
- Turiel, E. Developmental processes in the child's moral thinking. In P. Mussen, J. Langer, & M. Covington (Eds.), Trends and issues in developmental psychology. New York: Holt, Rinehart, & Winston, 1969.
- Turiel, E. Stage transition in moral development. In R. M. Travers (Ed.), Second handbook of research on teaching. Chicago: Rand McNally, 1973. (a)
- Turiel, E. A comparative analysis of moral knowledge and moral judgment in males and females. Unpublished paper, Harvard University, 1973. (b)
- Turiel, E. Conflict and transition in adolescent moral development. Child Development, 1974, 45, 14-29. (a)
- Turiel, E. The development of social concepts: Mores, customs, and conventions. Unpublished paper, Harvard University, 1974. (b)



- Turiel, E., & Rothman, G. The influence of reasoning on behavioral choices at different stages of moral development. Child Development, 1972, 43, 741-756.
- Vygotsky, L. A. Thought and speech. Cambridge, Mass.: M.I.T. Press, 1962.
- Weisbroth, S. Moral judgment, sex, and parental identification in adults. Developmental Psychology, 1970, 2, 396-402.
- Zaret, E. Personal communication, May, 1974.

















**B30165**